REDACTED BY ORDER OF THE COURT

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 1              IN THE UNITED STATES DISTRICT COURT
              FOR THE EASTERN DISTRICT OF TEXAS
 2                    MARSHALL DIVISION

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   PACKET INTELLIGENCE LLC      )(       CIVIL DOCKET NO.
 4                              )(
                                )(       2:16-CV-147-JRG
 5                              )(
                                )(
 6 VS.                          )(       MARSHALL, TEXAS
                                )(
 7                              )(
                                )(
 8 SANDVINE CORPORATION AND     )(       NOVEMBER 6, 2017
   SANDVINE INCORPORATED ULC    )(       8:30 A.M.
 9

10                    TRANSCRIPT OF JURY TRIAL

11          BEFORE THE HONORABLE JUDGE RODNEY GILSTRAP

12               UNITED STATES DISTRICT JUDGE

13 APPEARANCES:

14 FOR THE PLAINTIFF:      Mr. Paul J. Skiermont
                           Ms. Sadaf R. Abdullah
15                         Mr. Steven K. Hartsell
                           Mr. Alexander E. Gasser
16                         Mr. Steve J. Udick
                           SKIERMONT DERBY LLP
17                         2200 Ross Avenue
                           Suite 4800W
18                         Dallas, Texas    75201

19 COURT REPORTER:         Ms. Shelly Holmes, CSR, TCRR
                           Official Court Reporter
20                         United States District Court
                           Eastern District of Texas
21                         Marshall Division
                           100 E. Houston Street
22                         Marshall, Texas    75670
                           (903) 923-7464
23

24

25 (Proceedings recorded by mechanical stenography,
   transcript produced on CAT system.)
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 1  FOR THE PLAINTIFF:      Mr. William E. Davis, III
                            THE DAVIS FIRM, PC
 2                          213 N. Fredonia Street
                            Suite 230
 3                          Longview, Texas    75601

 4  FOR THE DEFENDANTS:     Mr. Gil Gillam
                            GILLAM & SMITH
 5                          303 South Washington Avenue
                            Marshall, Texas    75670
 6
                            Mr. Eric A. Buresh
 7                          Mr. Mark C. Lang
                            ERISE IP, PA
 8                          6201 College Boulevard
                            Suite 300
 9                          Orland Park, Kansas    66211

10                          Mr. Abran J. Kean
                            ERISE IP, PA
11                          5600 Greenwood Plaza Boulevard
                            Suite 200
12                          Greenwood Village, Colorado   80111

13
                   *****************************************
14

15                       P R O C E E D I N G S

16              (Jury out.)

17              COURT SECURITY OFFICER:  All rise.

18              THE COURT:  Be seated, please.

19              All right.  Counsel, I'm about to bring

20  the jury in, and we'll proceed with the opening

21  statements, the Court having previously seated the jury

22  and given them the Court's preliminary instructions.

23              Is there anything the Court needs to be

24  aware of or take up from either party before we proceed

25  to bring in the jury?
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1   Is there anything from Plaintiff?

2   MR. DAVIS: Nothing from the Plaintiff,

3 Your Honor.

4   THE COURT: Is there anything from

5 Defendant?

6   MR. GILLAM: No, Your Honor.

7   THE COURT: Mr. Skiermont, I asked while

8 we were in chambers earlier this morning whether

9 Defendants wanted a warning on their opening. I did not

10 ask you. Do you have any request in that regard?

11   MR. SKIERMONT: Five minutes, please,

12 Your Honor.

13   THE COURT: All right. We'll do that.

14   Mr. Nance, if you'll check, and if the

15 jury's ready, if you'll bring them in, please?

16   COURT SECURITY OFFICER: All rise for the

17 jury.

18   (Jury in.)

19   THE COURT: Welcome back, ladies and

20 gentlemen. Please have a seat.

21   Good morning, members of the jury. As

22 you'll recall previously, you were selected, seated, and

23 sworn in this case, and the Court's given you its

24 preliminary instructions. Since that time, we've

25 recessed, and we're reconvening this morning to proceed

 1 with the trial in the case of Packet Intelligence versus

 2 Sandvine Corp, Et Al.

 3   We'll proceed with opening statements

 4 from both the Plaintiff and then the Defendant. And

 5 after we've heard both -- both parties' opening

 6 statements, then the Court will swear the witnesses in

 7 the case, and the Plaintiff will call their first

 8 witness.

 9   So, Plaintiff, you may present your

10 opening statement to the jury at this time.

11   MR. SKIERMONT: Thank you, Your Honor.

12 May it please the Court.

13   THE COURT: Proceed.

14   MR. SKIERMONT: Good morning, ladies and

15 gentlemen of the jury. My name is Paul Skiermont. And

16 it's a great privilege to represent Packet Intelligence

17 and present our opening statement before this jury and

18 Honorable Court.

19   On behalf of the entire Packet

20 Intelligence team, including Ms. Abdullah and Mr. Davis,

21 who you met last week, who you will hear from during the

22 trial, as well, we know that your participation on the

23 jury is a burden, and we're deeply grateful for the time

24 and attention that you're taking this week to hear this

25 important case.

1   This is a patent case about a team of

2   visionary engineers who identified an important problem

3   20 years ago as the Internet was becoming more popular

4   and data traffic was exploding over networks.

5   This team of visionary engineers are the

6   inventors in this case. And you will hear during trial

7   that they not only saw this important problem 20 years

8   ago, they were the first ones to solve it.

9   The evidence will show that the

10 inventions they created were so groundbreaking that they

11 were awarded 19 patents from all over the world,

12 including seven United States patents, three of which

13 are at issue in this case and in your notebook.

14   They eventually sold the company that

15 they had started and built for more than $80 million for

16 the company and the technology that they had built from

17 scratch.

18   The patents that they have received have

19 been cited more than 500 times by other companies in

20 their own patent applications, including by leading

21 technology companies such as IBM, AT&T, and Amazon.

22   When a later patent cites an earlier

23 patent, that's called a forward citation. And you will

24 hear more about forward citations from the witnesses

25 during the trial.

1   You will also hear that one of Sandvine's

2   main competitors, Cisco, has acknowledged the very same

3   patents that are at issue in this case and agreed to pay

4   many millions of dollars for a license to use the

5   inventions in this case. And you will hear more about

6   that Cisco license and its specific amount later today.

7   The Defendant in this case, Sandvine, has

8   not taken responsibility for its infringing use of these

9   patents, and that is why we are all here this week.

10   Before describing more of the evidence

11   that you will see during the trial, I'd like to

12   introduce you to Packet Intelligence, who we will be

13   referring to throughout this trial as PI.

14   And I also want to introduce you to the

15   lead inventor of the patents in this case, Mr. Russell

16   Dietz.

17   PI's owners are Mr. Phil Vachon and

18   Mr. Brad Brunell. Mr. -- Mr. Vachon is at counsel

19   table, and Mr. Brunell is in the back.

20   You will hear -- Mr. Vachon will testify

21   today, and he will explain to you how and why PI was

22   formed, and he will also talk a little bit about PI's

23   patent licensing business.

24   And Mr. Dietz, the lead inventor, is also

25   here.

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 1                    If you would please stand up, Mr. Dietz.
 2  Thank you.
 3                    Mr. Dietz will testify as our first
 4  witness in the trial.  He will take the stand after
 5  Sandvine's opening, and he will tell you how he and his
 6  team of co-inventors came up with their invention.  And
 7  it really is a cool story of innovation and team work.
 8  And it happened 20 years ago about a technology that we
 9  all use every day, even if we don't quite know exactly
10  how it's working behind the scenes.
11                    Mr. Dietz is going to tell you about how
12  it works behind the scenes.  You will learn a lot about
13  that technology from Mr. Dietz.  He is a highly
14  respected technologist, and he currently works at
15  General Electric serving as GE's vice president, chief
16  security officer, and general manager of the industrial
17  Internet cyber security division.  And you'll get to
18  hear a little bit about that interesting job, as well,
19  when Mr. Dietz takes the stand.
20                    For the remainder of the opening, I'm
21  going to cover the following topics.  I'm going to
22  introduce you to the United States patent system and the
23  three patents in this case.  And then I want to preview
24  in some more detail the witnesses and evidence that
25  you'll hear this week that relates to the only issues
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1 | you will be asked to decide when the evidence concludes.

2 | No. 1, does Sandvine's product infringe

3 | at least one claim in the Packet Intelligence patent?

4 | And, No. 2, if they do, how much should

5 | they pay for their infringing use of the technology?

6 | The evidence is going to show that the

7 | inventors were pioneers and that PI's patents are

8 | foundational. They solved an important problem before

9 | anyone else, and their inventions are still in use to

10 | this day.

11 | In particular, Sandvine has made more

12 | than $114 million in revenue from December 2010 to -- to

13 | the present from their use of the technology disclosed

14 | in Mr. Dietz and his team's inventions.

15 | And, finally, I'll talk about some of the

16 | evidence that will relate to the damages in this case,

17 | damages in a patent case meaning a reasonable royalty

18 | that Sandvine should pay for its use of the inventions.

19 | So let's talk a little bit about the

20 | United States patent system.

21 | Patents are property and have some

22 | similarities to other property you may know about, like

23 | a house or mineral -- mineral rights or to land. And a

24 | common analogy is like that to a deed to a house. A

25 | deed is real property, and the deed identifies the metes

1 and bounds of the property that you own. And like other

2 forms of property, a patent may be bought, sold, and

3 transferred.

4   And like those deeds, as I'm going to

5 show you in a minute, at the end of each of the patents

6 in your juror notebook, there are a set of numbered

7 paragraphs called claims. And it is the claims that

8 define the metes and bounds of the invention like the

9 deed does to a house or to land.

10   We call patents intellectual property.

11 But like the deed to the house, the claim defines the

12 boundary of the intellectual property that has been

13 granted by the U.S. Government for a limited time. If

14 you own your home, you have rights inside the walls of

15 your residence. Someone who doesn't have permission to

16 enter cannot do so, or they would be a trespasser. And

17 if there's a trespasser, you can call the police.

18   If you own a patent, you have rights to

19 the invention described in the claims. And if someone

20 uses your patented inventions, that's called

21 infringement. But unlike for trespassers, you cannot

22 take an infringer to the police or call the police on

23 the infringer.

24   Instead, under our patent laws, you can

25 take the infringer to court and try your infringement

1 case to a jury, like the eight of you. And that's why

2 we're here.

3   As Judge Fogel explained on the video

4 that you saw last week about the patent system, in

5 exchange for creating and disclosing an invention in a

6 published patent to all the world, the owner of the

7 patent receives some rights from the U.S. Government.

8   Specifically, the patent owner gets the

9 right to keep all others from using the inventions

10 disclosed in the patent for a term of 20 years from the

11 date of the application. This is the fundamental

12 bargain, disclosure of the invention to everyone in

13 exchange for the exclusive rights to use it for a

14 limited term.

15   At the end of that limited term, anybody

16 who wants to use the inventions disclosed in that patent

17 can do so for free. But if they do not, if they use it

18 prior to the expiration of the patent, there's a promise

19 made to -- by the U.S. Government to patent owners to

20 protect the patented invention from use without

21 permission during that limited term.

22   It was intended that this patent system

23 would create the greatest economic innovation --

24 economic engine in the world, and it has.

25   In fact, patents are so vital to our

 1 country, it is in the very first Article of the United

 2 States Constitution. Then Secretary of State, Thomas

 3 Jefferson, was the first director of the U.S. Patent

 4 Ward. And, indeed, he was the first United States

 5 patent examiner.

 6   So let's talk about the patents that are

 7 involved in this case. What I'm holding up are the

 8 three official certified copies of the patents, as

 9 indicated by the gold seal. These are the same -- other

10 than the gold seal, these are the same as the three

11 patents that are in your juror notebook. The three

12 patents in this case, as you heard last week, are

13 referred to by the last three numbers of the patent.

14 And in your juror notebook, the patents are in order of

15 the '725 patent, the '751 patent, and the '789 patent.

16   Now, what's not in your notebook is the

17 original copy of every United States patent that issues

18 has a cover page that I'm displaying on your screen.

19 And what's really interesting is what it says right at

20 the top, which I've blown up and -- and called out for

21 you on the right.

22   And it says: The director of the United

23 States Patent and Trademark Office has received an

24 application for a patent for a new and useful invention.

25 The title and description of the invention are enclosed.

1 The requirements of law have been complied with, and it

2 has been determined that a patent on the invention shall

3 be granted under the law.

4   I want to walk you through the parts of a

5 claim. So if you would turn to the '725 patent in your

6 juror notebook, if you would, and what I've put on the

7 screen is some of the information that comes from the

8 cover of PI's '725 patent, and this is -- will be

9 referred to throughout the trial as Plaintiff's Trial

10 Exhibit No. 3. And you can see that the cover page of

11 the patent includes a lot of information -- includes the

12 patent number, the date it was filed, the date it was

13 issued, the inventors, and the title.

14   And it also includes, if you will --

15 under the examiner's names, on the right-hand column,

16 you'll see it says references cited in bold, and then

17 there are a list of U.S. patent documents. That --

18 those references cited, when I referred earlier to

19 forward citations, these are the references that were

20 cited during the time that the Packet Intelligence

21 patents were being applied for. And the forward

22 citations that I talked about earlier are when later

23 patent applications filed by other companies cite to

24 Packet Intelligence's patent. Those would appear in the

25 references cited portion of the other company's patent

1 that comes later.

2   The -- after the cover page, you will

3 then go -- you can see then that there are a series of

4 figures. And in these patents, there are several pages

5 of figures that you will see, and the figures are

6 examples that the inventors have described in the patent

7 of different and various ways the invention could work.

8 After the figures, there is what is -- there is kind of

9 the main body of the patent that we call the

10 specification, and those are all the two columns that

11 have -- that are numbered above that go on for -- for

12 several pages. That's called the specification.

13   And in the specification, the inventors

14 described some of the figures, they describe some of the

15 operation of the way their invention works, and then at

16 the end of the specification, what really is most

17 important in the United States patent are those numbered

18 paragraphs at the end called claims.

19   And in this case, there are four claims

20 that have been asserted that Sandvine infringes, and in

21 the '725 patent, that is Claim 10, and you need not turn

22 there, but for reference, we've asserted that Claims 1

23 and 5 from the '751 patent and Claim 19 from the '789

24 patent.

25   I have put a treated version of asserted

1 Claim 10 from the '725 patent on your screen. It would

2 be in the notebook in the -- in your numbered claim

3 section, but it's on the screen to show you what a claim

4 looks like.

5   What the claim does is it takes the

6 information that has been described in the patent, and

7 then it describes every step or element of the invention

8 that is required. And you can see there on your screen

9 that Claim 10 of the '725 patent has a number of

10 different requirements to meet the invention.

11   And what is important is it is the claims

12 that matter. You do not compare the infringing product

13 to figures in the patent. You do not compare the

14 infringing product to examples of the patent that are

15 described in the specification.

16   You compare the product that has been

17 accused of infringing to the elements in that claim that

18 is on your screen. And when you get your jury

19 instructions at the end of the case, they will say just

20 that. Compare the claims to the accused product.

21   And what the claims will show you, and

22 what you will hear during the trial, is that the

23 inventors came up with special techniques for inspecting

24 network data traffic, and they developed a way to track

25 that traffic based on a user's activity, based on what

1 the user was doing on the network. For example, using

2 Netflix or Skype or visiting websites or other

3 applications that can be used on the network.

4   And you'll hear that word a lot during

5 the trial, applications. An application is some -- is

6 something that a user uses on the network.

7   And you will hear that the inventors were

8 the first ones to figure out how to track and classify

9 and use network traffic in this way, and they coined the

10 technique that they came up with, some of the element --

11 the elements of which for Claim 10 are on your screen,

12 they coined the phrase "conversational flows" to

13 describe some of their special techniques.

14   You will hear much more about the

15 invention in more detail today, and you will learn about

16 the problems it solved for Mr. Dietz when he takes the

17 stand after Sandvine's opening.

18   And you will also learn more about the

19 invention and the benefits that it provides to network

20 operators from an independent expert witness, meaning he

21 is not an employee of Packet Intelligence, and that is

22 Dr. Kevin Almeroth, who is also in the court today.

23   If you'd stand, please, Dr. Almeroth.

24   And you'll hear from him later this

25 afternoon.

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 1                     The invention in the packet -- in Packet

 2  Intelligence's patents have been acknowledged and

 3  respected in many different ways, as has the work of the

 4  inventors in creating it.  The evidence presented during

 5  trial will reveal that the inventions disclosed in the

 6  patents are foundational because they identified an

 7  important problem and solved it first.

 8                     I've put on your screen a timeline of

 9  some of the important milestones of the development of

10  the inventions in the patents that I will walk through

11  briefly now.

12                     Mr. Dietz, in the early 1990s, co-founded

13  a company with three of his friends called Technically

14  Elite.  Between 1995 and 2000, Mr. Dietz served as the

15  chief technology officer of Technically Elite.  During

16  this time, Mr. Dietz and his team of co-inventors worked

17  to develop their inventions and file patent

18  applications.

19                     Realizing the importance of their

20  inventions and what market need they were addressing,

21  they changed their company name from Technically Elite

22  to Apptitude, A-p-p-titude, because they dealt with

23  tracking network activity based on applications.

24                     In August 2000, a publicly traded company

25  called Hi/Fn, H-i-f-n, bought Apptitude to apply the
```

1 technology Mr. Dietz and his team created, for cash and

2 stock worth more than $80 million.

3   Mr. Dietz became vice president and chief

4 technology officer of Hi/Fn, and he and his team

5 continued to work on the inventions and filed for

6 additional patents.

7   You will hear that during this time,

8 patents were granted in the United States, as indicated

9 on the yellow ones, the yellow ones on your screen,

10 those are the patents in this case. And you'll also

11 hear that they were granted all over the world,

12 including in other countries like China, Japan, Germany,

13 Australia and others.

14   In 2009 -- as I mentioned, patents, like

15 other property, can be bought, sold, and transferred.

16 And in 2009, a company called Exar acquired Hi/Fn and

17 the patents. And the evidence will show that the -- Mr.

18 Dietz's patents were not core to what -- the business of

19 Exar, and they did not have the capability or interest

20 or re -- to devote the resources to build a licensing

21 program for the patents that they had acquired when they

22 purchased Hi/Fn.

23   Prior to Packet Intelligence purchasing

24 the patents from Exar, Packet Intelligence, Mr. Vachon

25 and Mr. Brunell and others, conducted extensive research

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 1  to verify the quality and background of the inventors,

 2  the quality of the patents.  They spent additional time

 3  and money researching the market's use of the inventions

 4  that are disclosed in the patents.  And then they

 5  invested a considerable amount of money, of their own

 6  hard-earned money, to purchase the Dietz pat -- patent

 7  portfolio from Exar.

 8                      You will also hear that in March of 2015,
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 9  one of Sandvine's rivals, ██████  █████████████  █████

10  ███████  ████  ████  ████  ████████  █  ████████  for a license

11  to the technology in PI's patents.  All of the patents

12  issued in the U.S. and around the world to said purchase

13  and sale of the Apptitude, the 500-plus forward

14  citations by other companies, the Cisco license, they

15  are all evidence that the inventions Mr. Dietz and his

16  team created have been repeatedly acknowledged and

17  respected in many ways in many places.

18                      I want to transition to talk about

19  Sandvine's use of these patents, their infringing use of

20  these patents.  You will hear that Sandvine was founded

21  in August of 2001 by a group of former Cisco employees.

22  You will hear that they released their first product in

23  February of 2003, which was about three and a half years

24  after Mr. Dietz and his team filed their first patent

25  application, which was in June of 1999.
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 1                    And the evidence will show that Sandvine

 2  is the worldwide market share leader in network data

 3  inspection and classification to which these patents

 4  relate.

 5                    And Sandvine, ladies and gentlemen, is to

 6  be applauded for their success.  They founded a company

 7  in 2001 and built it to become the market share leader

 8  in the technology space that they competed in.  That's

 9  no small feat.

10                    And we are not here today or this week to

11  try to take away from or diminish the success that

12  Sandvine has had in any way.  But we think the evidence

13  that you will hear during the trial is going to show

14  that some part of that success came from the fact that

15  Sandvine built on the foundational patents developed by

16  Mr. Dietz and his co-inventors, and they have not

17  acknowledged that or been willing to pay for a license.

18                    Sandvine's infringing products are

19  referred to as various models -- various PTS series

20  of -- of models.  PTS stands for Policy Traffic Switch.

21  So what you see on your screen are images of the Policy

22  Traffic Switches.  And -- and these all, of course, have

23  associated hardware with them.  And it is these products

24  and their software that Packet Intelligence has accused

25  of infringing the invention -- of using the inventions
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1 disclosed by the patents that Mr. Dietz and his team

2 developed.

3   The evidence will show that Sandvine's

4 revenue and profits from its infringement of PI's

5 patents has been enormous. As I mentioned, their

6 revenue from infringing products from 2010 to today is

7 around 114 million.

8   And there has been calculations that you

9 will hear during trial that their projected revenue --

10 total projected revenue based on infringement until the

11 expiration of the patents in June 2022 will be

12 approximately $196 million.

13   You're going to hear testimony that

14 Sandvine's products infringe PI's patents from Dr.

15 Almeroth, who I already introduced to you. Dr. Almeroth

16 has a BA, MS, and Ph.D. from Georgia Tech in computer

17 science, and he specializes in network technology. He's

18 a professor in the computer science department at the

19 University of California at Santa Barbara, and he will

20 explain the analysis he conducted and the methodology he

21 employed to conclude that in his expert opinion, these

22 Sandvine products infringe the patents-in-suit.

23   What is on your screen is some of the

24 methodology that you'll hear from Dr. Almeroth about

25 what he did to determine Sandvine infringes these

 1 patents.   He examined the patents.   He examined the

 2 exchange between the applicants and the Patent Office

 3 that occurred before the Patent Office issued those

 4 patents.

 5   He examined Sandvine's product

 6 information, including getting access to Sandvine's

 7 highly confidential internal documents, their customer

 8 facing documents, their internal technical documents,

 9 and even the source code of the accused products he was

10 able to review.

11   Source code, ladies and gentlemen, is

12 collection -- is a collection of computer instructions,

13 sometimes with comments written in them, written using a

14 human readable programming code -- programming language,

15 I should say.

16   Dr. Almeroth also was able to examine the

17 testimony of Sandvine witnesses during pre-trial

18 depositions where Sandvine witnesses answered questions

19 under oath, including Sandvine's CEO, Mr. Dave Caputo,

20 and Sandvine's CTO, or chief technology officer, Mr. Don

21 Bowman.   And he was also -- analyzed court documents,

22 such as -- as you heard last week, certain definitions

23 of the term -- of terms that are in the claims that I

24 showed you, will be provided, certain definitions of

25 those terms, by the Court.   And there was also an

1 exchange of documents between the parties where we get

2 to ask each other questions and they respond in writing.

3 And Dr. Almeroth was able to examine all of that.

4 And based on all of that evidence, you will hear his

5 opinion about why Sandvine infringes.

6   And just to give you a quick idea that --

7 so you're not a little bit overwhelmed by the length of

8 these claims, what Dr. Almeroth has done is broken up

9 these claims into discrete pieces that you can handle

10 one at a time. And he walks through the evidence of

11 Sandvine's use for each discrete piece. And then when

12 he is finished, if he's concluded that he has found that

13 element of the claim in the evidence from Sandvine's

14 product, he will put a check on the box right next to

15 that claim. And that will be -- and you'll hear from

16 him today.

17   The evidence will show that Sandvine is

18 not only using the patented inventions, it will also

19 show that Sandvine's use of the inventions is

20 fundamental to their business.

21   THE COURT: You have five minutes

22 remaining, Counsel.

23   MR. SKIERMONT: Thank you, Your Honor.

24   This is one of those documents I referred

25 to that was exchanged during discovery. And this is a

 1 Sandvine document saying the traffic classification is

 2 the foundation of their policy control and business

 3 intelligence for the straightforward reason that you

 4 can't manage what you can't measure. Informed decisions

 5 require information.

 6   Here's another Sandvine document that

 7 explains that Sandvine associates flows, and the reason

 8 they associate different flows together related to a

 9 user's activity is because the only way you can identify

10 what that activity is that's going over a network is if

11 you can identify that it is related to an activity, even

12 if it's coming over multiple different connections.

13   And you will see a number of pieces of

14 evidence where Sandvine is promoting their products to

15 their customers and explaining how they do not only

16 track connection flows, but that they relate connection

17 flows to one another related to the service or activity

18 of a user so that the network operator has that

19 information at that level of granularity.

20   Despite the overwhelming evidence of

21 infringement you will see during trial, Sandvine and

22 Mr. Caputo have been unwilling to acknowledge Mr.

23 Dietz's inventions are at the core of what Sandvine

24 does, even though Mr. Dietz and his team invented this

25 technology years before Sandvine was even formed.

 1   Let's talk last about damages.

 2   Judge Gilstrap will instruct you at the

 3 end of the case that if we prove Sandvine infringed one

 4 claim of the patents that are asserted, Packet

 5 Intelligence is entitled to recover no less than a

 6 reasonable royalty.

 7   You can think of a reasonable royalty

 8 like rent. And if you own your home, you have the

 9 rights to keep people off of your property, or you can

10 charge them a fee for using it. And if you use

11 someone's house, you pay rent. If you use someone's

12 invention, you pay a reasonable royalty.

13   So if you conclude that Sandvine

14 infringes, they must pay at least a reasonable royalty

15 for the use of those inventions. And you'll hear

16 testimony about what a reasonable royalty should be in

17 this case. That testimony will come both from Dr.

18 Almeroth, who you've met, and from Mr. Bergman, who you

19 haven't.

20   So, Mr. Bergman, if you would stand up,

21 please.

22   And Mr. Bergman is an economist, an

23 expert in accounting, and also an expert in determining

24 reasonable royalty -- reasonable royalties for patent

25 infringement. And he will take the stand and testify to

1 you and explain in detail how to value PI's patents and

2 how to value Sandvine's infringement. And he will do so

3 in two different ways using completely different inputs

4 to arrive at a very similar number.

5   The first way that he will use is

6 called -- is called the incremental method. And you can

7 think of the incremental method refers to the

8 incremental profits that he calculated Sandvine earned

9 as a result of using the patented inventions.

10   And based on that analysis, he will

11 describe -- he will explain that in his opinion, based

12 on the profits from use analysis, that Sandvine should

13 pay a royalty of $13.49 million through the life of the

14 patent.

15   He did a second approach with different

16 inputs called the market approach. In the market

17 approach, Mr. Bergman looked to comparable license

18 agreements. It's very similar when you're -- to when

19 you're shopping for a home, and there are comparables.

20 You're trying to define is a price -- is a house priced

21 too low or too high for the neighborhood it's in, for

22 the size of the house, for the other houses that are

23 considered to be comparable to that house.

24   And that's the same concept for the

25 market approach in patent infringement damages is you

1 look for comparable license agreements to determine the

2 value of the reasonable royalty.

3   And you'll hear that Mr. Bergman did that

4 in this case. He analyzed the Cisco license that I

5 mentioned before. And based on the Cisco license, Mr.

6 Bergman calculated a reasonable royalty of $13.89

7 million. And what you've seen on the screen is that

8 $13.89 million dollars represented in a pie chart as a

9 slice of the total infringing revenue that Sandvine will

10 have by the time of patent expiration.

11   Mr. Dietz and his team were pioneers.

12 They solved an important problem before anyone else.

13 And Sandvine's use of those pioneering inventions is

14 fundamental to their business. Unfortunately, Sandvine

15 has not been willing to do the right thing and pay for a

16 license.

17   We all know that when someone is using

18 something that you own without your permission, you

19 really have two choices. You can sit back and do

20 nothing, or you can stand up for your rights.

21   Packet Intelligence is standing up. And

22 at the end of trial, we will come back in our closing

23 argument and ask for your help to make Sandvine play by

24 the rules.

25   Thank you, ladies and gentlemen, for your

1 attention.

2   THE COURT: All right. Having heard

3 Plaintiff's opening statement, we'll now hear opening

4 statements from the Defendants.

5   Mr. Gillam, you may proceed.

6   MR. GILLAM: Thank you, Your Honor.

7   Good morning again, everybody. My name

8 is Gil Gillam. I work down the street.

9   Play by the rules, the last thing

10 Mr. Skiermont told you. The one thing that he didn't

11 tell you was the most important rule, and that is you

12 don't go out and sue somebody and try to get money from

13 them for something that they did not do.

14   Fortunately, in this case, Judge Gilstrap

15 makes the rules that we live by and that we play by

16 here.

17   Let me talk to you a little bit about

18 this case. You know, some patent cases are challenging

19 because the parties that are involved in the case are

20 very similar to one another. Some cases are difficult

21 because the technology that is being accused or that the

22 company that is making the accusation is quite similar

23 to what the person that's being accused of doing is.

24   In this case, folks, Sandvine and Packet

25 Intelligence can be no different -- no more different

1 than they are.   In this case, the way they approach this

2 issue of packet monitoring could not be more different.

3   The packet monitor system described to

4 you by Mr. Skiermont and described in these patents and

5 upon which Packet Intelligence has brought this lawsuit

6 is based on an idea called conversational flows.   Let me

7 repeat that word to you, conversational flows.

8   And you'll notice that Mr. Skiermont,

9 when he talked about connection flows and when he talked

10 about associated flows, never mentioned the word

11 "conversational flows."   And with good reason, because

12 he knows that Sandvine doesn't use it.

13   You'll find that term, "conversational

14 flows," in the patents themselves, and they know that

15 Sandvine does not use conversational flows.

16   The packet technology that was

17 encompassed in these patents, folks, was a commercial

18 failure.   That is not a criticism, it is just a fact.

19 Sandvine did not build its ideas -- did not build its

20 products on failed ideas.   Sandvine used an exact

21 opposite approach from what is described in these

22 patents.

23   Under our law, when you do it

24 differently, when you don't use someone else's ideas,

25 and importantly, when the language of the claims in the

1 patent cannot be found in what Sandvine does, under our

2 law, that is non-infringement. There is no

3 infringement.

4   What is a packet monitor? What are we

5 talking about here?

6   Have you ever received a message on your

7 phone that said buffering, buffering? You ever tried to

8 upload a video and you got that little circle spinning

9 around and around and around, and you can't ever get

10 what you want to get to because it just won't come. Or

11 your phone won't pull up the Internet or you can't get

12 Facebook to feed at all to your phone. Packet monitors

13 are simply designed to help network providers like AT&T

14 and T-Mobile and Verizon keep these networks running

15 smooth and running fast so that we don't experience

16 those kind of delays. That's what packet monitors do.

17   As I told you, the two parties in this

18 lawsuit could not be more different. And importantly,

19 how they approach this problem that Mr. Skiermont told

20 you about could not be more different.

21   Excuse me.

22   Sandvine was started in 2001 by five

23 guys, including Dave Caputo and Don Bowman. You met

24 Mr. Caputo the other day. Mr. Bowman will be here as

25 well during the trial of this case. You'll hear from

1 him, as well.

2   Pull up the first slide, please.

3   This is back in 2001. This is the first

4 day that their company was announced. And you'll see

5 Mr. Caputo there, he was the one in the window, peeking

6 out of that window there. And Mr. Bowman, who you'll

7 also hear from, is the one -- oh, the one that's lacking

8 a little hair up on the top left of that van, that's

9 Mr. Bowman, you'll hear from him, as well.

10   Mr. Caputo, the president and CEO of the

11 company, directed the building of the business, and

12 you'll hear from him.

13   Mr. Bowman was the chief technology

14 officer. He built the technology. And their packet

15 monitor was known as the PTS monitor. Mr. Bowman and

16 his team invested years of their lives in personally

17 developing the PTS product from the ground up.

18   Folks, they programmed it from scratch,

19 and Mr. Bowman has been working on this product in one

20 iteration or the other for the last 15 years.

21   He wrote the software that runs

22 Sandvine's PTS monitors. And you're going to hear from

23 him in this case, and he'll tell you exactly how he did

24 it.

25   You're going to hear from Mr. Caputo, as

1 well, and he's going to talk to you about what has made

2 their technology successful, the awards that they have

3 received for the work that they have done. The industry

4 first that they were able to accomplish because of this

5 technology they put together.

6   And they'll both tell you this, that

7 Sandvine never saw these patents that these guys are

8 complaining about here. They never heard of Packet

9 Intelligence, they never heard of the idea or the

10 invention that they're being sued upon. That's who

11 Sandvine is.

12   Now, let's turn to Packet Intelligence

13 and its patents for a minute.

14   The ideas that became the '725, the '751,

15 and the '789 patents that you're concerned with in this

16 case were developed by a group of inventors --

17 inventors. One, Mr. Dietz, you know -- you met a few

18 moments ago. He was one of a number of them that came

19 up. And you'll hear from him.

20   And you'll also hear portions of

21 testimony from other inventors that we took the

22 depositions of. Judge Gilstrap mentioned it last week.

23 You'll hear some deposition testimony in this case.

24 But you need to understand, folks, that this case is

25 not -- let me repeat, it is not between Mr. Dietz and

1 these inventors and Sandvine. Mr. Dietz and the

2 inventors that invented these patents or came up with

3 these patents or these products are not parties to this

4 lawsuit. They are not.

5   The inventors that came up with these

6 ideas, Mr. Dietz and his -- and his co-inventors, were

7 working on a packet monitor program, and these patents

8 came out of that project that they were working on, just

9 like Mr. Skiermont told you. And they spent a lot of

10 time on it, and I'm sure they were proud of the work

11 that they did. And we don't want to take anything away

12 from the work that they did, but the patented technology

13 that they came up with was not successful when it was

14 put out into the marketplace. It was not successful as

15 a commercial product. That happens.

16   You'll hear from Mr. Caputo, from

17 Mr. Bowman, they'll tell you, we had a false start, as

18 well. It's not uncommon in the technology business for

19 things not to work out like you hope they would work

20 out.

21   But the fact is, is that the products

22 based upon this technology that's in these patents,

23 these folks are talking about today, sold a total of 15

24 units over a period of about five years, that's it.

25 But as I told you, the inventor's company, they talked

1 about Technically Elite, Apptitude, that is not Packet

2 Intelligence, the company that bought this lawsuit.

3   I've got a timeline up in front of you

4 there. Let me walk you through a little bit of it.

5 Mr. Dietz's company was called Technically Elite. They

6 changed it to Apptitude. And Apptitude was bought by a

7 company called Hi/Fn in 2000. You see it up there on

8 the left of the page.

9   The patents we're talking about today

10 came out in 2003 and 2005, you can see on the page

11 there. Sandvine was founded back in 2001, and the first

12 PTS monitor or first PTS device that Sandvine put out

13 came out in February 2003, before these patents were

14 ever published for the world to see.

15   Now, Hi/Fn, the company that bought the

16 '789, the '725, and the '751 patents, they tried to work

17 with the technology that was in those patents. And it

18 failed. It didn't work.

19   They were part of the group that sold --

20 the 15 that I told you about a few moments ago.

21   Hi/Fn was later acquired by this company

22 called Exar. You'll see that up just before the 2000 --

23 right in February of 2009.

24   Now, Exar was a company that actually

25 made products. But it, too, looked at these patents.

1 It, too, looked at this technology that they came up

2 with and they said, you know, we're not doing that. And

3 the reality is, is that Exar Corporation was intending

4 to abandon these patents altogether because they didn't

5 want to pay a couple of thousand dollars in maintenance

6 fees to keep these patents alive.

7   So how do we get to Packet Intelligence,

8 Mr. Vachon and Mr. Brunell's company? How do they get

9 involved?

10   Well, these are a couple of investors

11 that found out about these patents that were getting

12 ready to go in the scrap heap, and they came in and they

13 bought them. The fact is they didn't just buy these

14 three patents, but they bought a total of 26 patents for

15 $500,000 up front. That's what they paid for 26

16 patents, not three, 26 patents, $500,000 up front.

17 And through a series of other tractions, they ended up

18 paying eventually a total of 875,000 for all three -- or

19 I'm sorry, for all 26. A total of $875,000.

20   And how much are they demanding that

21 Sandvine pay on that investment of $875,000 for 26

22 patents, how much are they asking for Sandvine to pay

23 for the value of three? Almost $14 million.

24   So what does Packet Intelligence actually

25 do? It doesn't make products from this technology, this

 1 foundational technology that Mr. Skiermont talked to you

 2 about. It doesn't sell any products using this patented

 3 technology. In fact, Packet Intelligence does not make

 4 or sell any product at all.

 5   As Mr. Skiermont told you, it is a

 6 licensing company. And what exactly does that mean? It

 7 means that the business model of Packet Intelligence is

 8 to take these patents that they bought and demand

 9 companies take a license to these patents. And if they

10 don't take a license to the patent, they sue them. Or

11 in the case of Sandvine, they don't even make a demand

12 in advance of the lawsuit that you take a license. They

13 just brought a lawsuit against them.

14   So the difference between Sandvine and

15 Packet Intelligence could not be more different.

16   Let's turn to the technology. I told you

17 the technology was different, as well.

18   Sandvine uses a completely different

19 design choice to build its packet monitor -- monitors.

20 And the evidence is going to show you that Sandvine has

21 been wrongfully accused in this case.

22   Remember we talked about last week how

23 the Plaintiff always gets to go first, and then the

24 Defendants get to go second. This is what we're doing

25 here, and this will continue all the way throughout the

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 1  trial.  I'm going to ask you to wait until you hear both

 2  sides of the story before you make any decision in this

 3  case.

 4              Now, my friend Mr. Buresh who I

 5  introduced you to last week who is going to be

 6  presenting our expert, Dr. Nettles, who will talk to you

 7  about why we do not infringe these patents is going to

 8  get up and explain something about the difference

 9  between the technology that these patents cover and what

10  we actually do.  And then once he's through, I'll have a

11  few closing words for you.

12              THE COURT:  Mr. Buresh, you have 16

13  minutes remaining.

14              MR. BURESH:  Thank you, Your Honor.

15  And thank you, Mr. Gillam.

16              Ladies and gentlemen, my name is Eric

17  Buresh.  This is the first time to meet you or speak

18  with you.  I practice law up in Kansas City.  Mr. Gillam

19  was kind enough to invite me down to work with him to

20  present this case on behalf of Sandvine.  And it is my

21  pleasure to do so.

22              And I would simply say if there are

23  Cowboys fans, congratulations on beating my home team

24  last night.  I know there are other issues in Texas that

25  probably put a damper on that game.  And I'm sure our
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 1  hearts are heavy with that.  But we have a job to do

 2  today, and we are going to do that.

 3                   As Mr. Gillam described, there's an

 4  interesting background story.  I'm not going to go

 5  through the whole thing again, but that background story

 6  follows through Russell Dietz and Don Bowman on two

 7  separate sides of it, a commercial failure and a

 8  commercial success on two opposite sides.  And I'm going

 9  to focus on the technology for a few moments.  And

10  you've heard this word before.  On the left-hand side of

11  the screen in front of you you see conversational flow.

12                   Now, on the right-hand side, you see the

13  term "connection flow," and those are two different

14  design options that we're going to be talking about

15  extensively in this case.

16                   Because, ladies and gentlemen, on the

17  left-hand side, conversational flow is what Mr. Dietz

18  and his team invented.  It's what's described in the

19  patents.  It's what's claimed in every single claim that

20  is being asserted in this case.  It is the invention.

21                   On the right-hand side, you see the idea

22  of a connection flow.  That is what Sandvine does.  And

23  it is a totally different thing.  And we're not asking

24  you to take our words for it, all right?

25                   I'm going to take you straight to the
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1 patent now, ladies and gentlemen, and this is out of the

2 '789 patent. We'll show you in more detail when we have

3 our witnesses up on the stand where this is coming out

4 of, but it's out of the '789 patent.

5   And we see this concept highlighted on

6 the screens in front of you of a conversational flow.

7 It's the sequence of packets that are exchanged in any

8 direction as a result of an activity. I'm going to

9 focus on that concept of an activity with respect to

10 conversational flow.

11   But before we get there, we have a very

12 interesting thing in this case because not only are the

13 inventors, Mr. Dietz and his team, telling us what the

14 invention is, they actually have told us what the

15 invention is not.

16   If we go backwards a sentence, some prior

17 art packet monitors classified packets into connection

18 flows. What does that mean? What is prior art? Prior

19 art means ideas that came before the invention. It was

20 prior, all right?

21   Now, prior art packet monitors used

22 connection flows, so the idea of connection flows was

23 not new. It was not attributable to the inventors, and

24 they said so.

25   Okay. So we know what the invention is

1 not.   The term "connection flow" is commonly used to

2 describe all packets involved with a single connection.

3 That is not the invention.   And we have the inventor's

4 own words telling us that.

5   So I'm going to talk to you for a moment

6 about connection flow.   We're going to dive into the

7 technology.   We're going to have to ask you to do that

8 with us in this case, and I'm going to preview what

9 you're going to hear as this case progresses.   And I'm

10 going to use an example of a smartphone.   This could be

11 any smartphone.   And I'm going to use an example of

12 Facebook.   And I'm using that example because I think

13 Facebook is something that either we've used or we're at

14 least familiar with.

15   So here's how Facebook works on a

16 network.   The first thing you're going to see when you

17 push your Facebook application on your phone, it's going

18 to pop up a feed on your phone.   If everything's working

19 right in the network, you're going to get your Facebook

20 feed.

21   So you might see photographs from your

22 friends, like your neighbor's kids going off to school

23 or your friends on a vacation, whatever is in the

24 pictures that you want to look at from your friends,

25 they're going to start popping up on your feed.   They

1 don't come from nowhere, obviously. They come from

2 Facebook.

3   So what we're depicting here is real

4 simple. And Dr. Nettles, who's sitting in the back --

5 if you could stand up, Dr. Nettles? Dr. Nettles has

6 been teaching for many years -- I think upwards of 30,

7 but he'll tell you more specifically -- this type of

8 stuff, and he's going to explain this in a lot more

9 detail, and I think probably a lot better than I can.

10   But what we see on this screen is Bob's

11 phone that we were just looking at. I don't know who

12 Bob is. I'm just using that as an example. Photos on

13 the right-hand side. That's going to be a server at

14 Facebook. And I don't mean to make servers complicated.

15 They're just computers that store data that allow you to

16 get your information off of the Internet. So the server

17 holds the photos of your friends, and you can get those

18 from the server.

19   Sitting in the middle of those two is a

20 packet monitor, and that's what this case is about,

21 okay? And the first design option that we're going to

22 be looking at for this packet monitor is a packet

23 monitor that monitors connection flows, the prior art,

24 what the inventors did not invent, okay?

25   Now, I'm crawling inside. I'm looking at

 1 the foot of the packet monitor. I'm crawling inside of

 2 it, and I'm looking at how it's processing the packets.

 3   What are packets? They're just little

 4 pieces of information that's sent across the Internet.

 5 So when your photos are coming in, they're coming in on

 6 things called packets, just little -- think of little

 7 chunks flowing across the network.

 8   Now, in this example of a connection

 9 flow -- we're going to talk about this idea of a

10 connection. It is just the two end points and how the

11 traffic is being carried in between.

12   Now, the technical experts in the room

13 are going to cringe at me saying this, but it's just

14 honestly how I think about it. It's two tin cans and a

15 string. When you were a little kid and got with your

16 friends and had a can up here and you were talking

17 through it, that's how I think of a connection because

18 you have an end point on one end, you have an end point

19 on the other end, Bob's phone, photos, and you've got

20 the connection in between, okay?

21   So when we look at how this packet

22 monitor processes a connection flow, it looks at the end

23 points, Bob's phone and photos. It says: That's my

24 connection. Any packets carried over that connection,

25 I'm going to put them into this flow-entry, okay? So

1 let's see what happens as we proceed.

2   We scroll through the Facebook. Now

3 we're going to come to a coupon. And this is a Sonic

4 advertisement for one dollar hot dogs on November 9th.

5 So we have a coupon that popped up on Facebook. That's

6 going to be a different server, okay? So now we have

7 different end points. It's the same with Bob's phone,

8 but we have a different end point on the other end.

9   So what do we have? A new connection. A

10 new connection and a new connection flow. So we have a

11 new entry in our table. Bob, coupons, and it's going to

12 start counting packets flowing on that connection.

13   Let's do another one. We scroll up in

14 our feed, and we see the family handyman photo on our

15 Facebook feed. This is a video. A video is going to be

16 on a different connection, okay? So we have another

17 server at Facebook, a video server this time. We

18 establish a new connection, new end points, start

19 sending packets, and because it's a new connection, it's

20 a new entry in your table.

21   Now, I want to take a step back. I have

22 three depicted here. In a real Facebook application,

23 you're going to have 30, 50, a hundred connections.

24 There's a massive amount of data, massive -- massive

25 amount of information being transmitted back and forth,

```
 1  upwards of a hundred connections.

 2                  All right.  So you're going to have a

 3  hundred different entries in your -- in your table.  And

 4  not only that, but your table is going to have somewhere

 5  between one and 30 million, okay.  It's huge.

 6                  Excuse me.

 7                  And these 100 connections are going to be

 8  spread out over a million.  So just think in your mind's

 9  eye, huge table, lots of entries for this one Facebook

10  activity.

11                  Now, let's come back to the invention.

12  What we just saw was the prior art.  What we just saw is

13  how Sandvine does it.

14                  Now we're going to see the invention,

15  conversational flows.  We're going to walk through this

16  a little more quickly because what's happening between

17  Bob and Facebook is all the same.  But the monitor in

18  between is different.  So when we crawl under the hood

19  of this monitor that's described in the patents, it's

20  going to function differently, it's going to use

21  conversational flows.  And if you remember that

22  definition, it's based on the activity, okay.

23                  So now Facebook is our activity.  So no

24  matter what connection the Facebook traffic is flowing

25  on, it's one conversation.  So we have Bob, the photos.
```

1 We do the processing, we say that's Bob's Facebook

2 conversation. We have the Bob, the coupons. It's a new

3 connection, but it's part of the same conversation

4 because it's part of the same activity. There's no new

5 entry. It's still part of Bob's conversation.

6   We have Bob, the video. Same activity,

7 same conversation, same entry, okay. There's no -- it

8 doesn't matter if we have new connections. If we have a

9 hundred new connections, still part of the same

10 activity. Still part of Bob's Facebook conversation.

11   So if you think about it, what's

12 happening here is that no matter where your -- your

13 traffic is -- is going over the network, no matter what

14 connection is used, we're putting a bundle on it, and

15 we're saying, I don't care what's carrying it, all I

16 care about is that I have a bundle for all my Facebook

17 activity. That's the invention.

18   Now, I'm going to blow this out and bring

19 them together.

20   On the left-hand side, we have the

21 conversational flow-entry. It's just one. One

22 activity. On the right-hand side, we have the multiple

23 connection flows. I still don't have them all on here,

24 okay. It's a hundred. It's a million rows, all of them

25 happening at the same time. That's your connection

```
 1 flow-entries.
 2            Now, what I'd like to do in these cases
 3 is try to bring you into the real world.  This is inside
 4 of a computer.  I personally like my computers to work.
 5 I don't know how they work, but I don't mind trying to
 6 figure it out.  But I know a lot of folks don't even
 7 like trying to figure it out.
 8            So what I try to do in these cases is --
 9 is take this technology out of the computer and bring it
10 into the real world.  And I was thinking about how I
11 could explain this concept that you're looking at on the
12 screen in the real world, and for some reason, what
13 popped into my mind was weddings when I was a kid.
14 And when I was a little boy, the only thing I liked
15 about weddings was the end, okay.  I liked throwing rice
16 at the bride and groom.  That -- that was the only part
17 of the wedding as a little kid that I liked.  And so
18 that's what popped into my head.
19            On the one hand, if you have a handful of
20 rice, and rice is your Facebook connections, okay, if
21 you have a handful of rice and it's loose, hundred
22 pieces of rice loose in your hand, you're ready to throw
23 at the bride and groom, you're a young boy, standing at
24 the back of the crowd, out in the grass while the bride
25 and groom come down the sidewalk out of the church,
```

1 okay. And you drop that hundred grains of loose rice

2 into the grass at your feet, okay, you've dropped your

3 rice, it's in a million blades of grass, it's going to

4 be hard to find. That kid, me in this case, is going to

5 drop down to your knees and start picking through the

6 grass trying to find the rice. And eventually, maybe

7 four hours later, maybe two days later, I'm going to

8 have a handful of a hundred pieces of rice again.

9   That's connection flows. They're all

10 loose, they're hard to find. Eventually, you might be

11 able to do it, but that's the handful of rice.

12   On the other side of it, they have those

13 little mesh bags, I don't know if you remember them

14 because at weddings now they -- they blow bubbles or do

15 confetti or whatever. But back in the day they had

16 these little rice bags, and they were -- they were made

17 of mesh, I think, and they were scratchy but soft at the

18 same time, if you can -- if you remember what those felt

19 like. And you had a little blue ribbon around them.

20 That's your conversational flow. You can take a hundred

21 pieces of rice, but they're in a mesh bag, with a blue

22 ribbon tied around it.

23   Now, that same little kid standing back

24 at the crowd in the grass waiting for the bride and

25 groom to come out, if they drop their bag of rice in the

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 1 grass, not a problem, right?  I just stoop over and pick

 2 up the bag, and I'm ready to go again.

 3                 It's two different design options.

 4                 Now, what you're going to hear from

 5 Packet Intelligence is because a person might be able to

 6 stoop in the grass and pick up a hundred pieces of rice

 7 by picking through a million blades of grass and hold

 8 them in their hand again that that's exactly the same

 9 thing as having them in a bag.  Anybody who's ever had

10 anything like that happen would be able to tell the

11 difference.

12                 They're not the same thing.  They are two

13 different design choices.

14                 And if you look at your screens, the

15 inventors told us that.  They are two different things:

16                 Connection flows, conversational flows.

17                 Thank you, ladies and gentlemen.

18                 Mr. Gillam.

19                 THE COURT:  You have a minute and a half,

20 Mr. Gillam.

21                 MR. GILLAM:  So why are we here?  Just

22 like we talked about the other day, when you're accused

23 of doing something that you didn't do, you fight it.

24 Sandvine does it differently.  I believe in calling

25 things what they are.
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1   What's this case really about? Packet

2   Intelligence is not here standing up for the rights or

3   the honor of these inventors. It's not truly about how

4   great these ideas are. They called them foundational.

5   There's no requirement that Packet Intelligence goes out

6   and does anything with these patents. But don't you

7   know if they were as great as what they say they are,

8   they would be out building products with these things

9   and competing in the marketplace with companies like

10 Sandvine?

11   No, this case is about money. And the

12 amount of money demanded by Sand -- by Packet

13 Intelligence in this case is unreasonably high. And

14 we'll bring you testimony that will show you that, as

15 well.

16   We'll show you that they have ignored

17 comparable royalty rates. They spoke to you about

18 royalties a few moments ago. They've ignored comparable

19 royalty rates for the very patents that they're talking

20 about here. They are trying to stretch these patents

21 into products and services of Sandvine that they did not

22 even accuse.

23   Would you put up their last slide, that

24 pie chart, for me?

25   THE COURT: Mr. Gillam, your time is up.

1 Take just a few seconds and finish up.

2   MR. GILLAM: Then I won't -- I won't go

3 to this, Your Honor. We'll deal with this later.

4   Folks, we're confident at the end, that

5 you will agree with us, that we do not infringe, and

6 that these damages they demand are unreasonable.

7   Mr. Buresh, and you'll hear from Mr.

8 Kean, as well, and myself, we look forward to presenting

9 this case to you, and I appreciate you listening to us.

10   Thank you.

11   THE COURT: All right. Ladies and

12 gentlemen, you've now heard opening statements from both

13 Plaintiff and Defendants.

14   I'd like to ask if there are any persons

15 in the courtroom who anticipate being called as

16 witnesses in this trial, if anyone present is going to

17 testify in the case would come forward at this time

18 collectively. I'll ask our courtroom deputy to

19 administer the oath to the group of witnesses as a

20 whole. That will save us time as we go forward in the

21 trial from having to swear each witness one at a time.

22 If you're a witness in this case, please come forward.

23   (Witnesses sworn.)

24   THE COURT: Thank you, ladies and

25 gentlemen. Please return to your seats.

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 1                    Counsel, does either party wish to invoke
 2   the Rule at this time?
 3                    MR. DAVIS:  The Plaintiff does, Your
 4   Honor.
 5                    THE COURT:  All right.  Do I understand
 6   that that would exclude expert witnesses and corporate
 7   representatives?
 8                    MR. DAVIS:  Yes, Your Honor, that's
 9   correct.
10                    THE COURT:  All right.  The rule has been
11   invoked, ladies and gentlemen, excluding expert
12   witnesses and corporate representatives, which means
13   that if you are a fact witness in this case, you're
14   going to testify about facts but you are not designated
15   as an expert and you do not represent one of the parties
16   in the courtroom, then you must excuse yourself under
17   the rule and remain outside the courtroom until you're
18   actually called to testify at which -- at which time you
19   may enter the courtroom and take the witness stand.
20                    So the rule having been invoked, unless
21   you are an expert witness or a corporate representative,
22   if you anticipate testifying in this trial, excuse
23   yourself and remain outside the courtroom until you're
24   called to the witness stand.
25                    All right.  The rule has been invoked.
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1   Plaintiff, call your first witness.

2   MR. DAVIS: Your Honor, the Plaintiffs

3 call Mr. Dietz to the stand.

4   THE COURT: All right. Mr. Dietz, please

5 come around to the witness stand, having been previously

6 sworn.

7   THE WITNESS: Thank you, Your Honor.

8   THE COURT: Counsel, if we have

9 notebooks to pass out as new witnesses are called, I'll

10 grant both sides leave in advance. Just get them passed

11 out as quickly as you can so that we can then proceed

12 with that party's direct or cross-examination.

13   MS. ABDULLAH: Your Honor, I understand

14 that the other binders have already been distributed.

15   THE COURT: All right.

16   MR. BURESH: May I approach, Your Honor?

17   THE COURT: You may. Let's get it done

18 for both sides, and we can go forward without this

19 interruption.

20   All right. Counsel, you may proceed with

21 your direct examination.

22   RUSSELL DIETZ, PLAINTIFF'S WITNESS, PREVIOUSLY SWORN

23   DIRECT EXAMINATION

24 BY MS. ABDULLAH:

25   Q.   Good morning.

 1   A.   Good morning.

 2   Q.   Would you please introduce yourself to the

 3 jury?

 4   A.   Yes. My name is Russell Dietz.

 5   Q.   Are you married, Mr. Dietz?

 6   A.   Yes, I am. And my wife is here in the

 7 gallery.

 8   Q.   Do you have any kids?

 9   A.   Yes, I do. I have three sons, 26, 23, and 19.

10   Q.   And where do you live, Mr. Dietz?

11   A.   I live in San Jose, California.

12   Q.   Where do you work?

13   A.   I currently work at GE, General Electric.

14   Q.   What exactly do you do at General Electric --

15 Electric?

16   A.   I'm the vice president and chief security

17 officer, as well as the general manager of the

18 Industrial Internet Cyber Security Center of Excellence.

19   Q.   Can you tell us a little bit about what you do

20 as vice president, chief security officer, and general

21 manager of industrial Internet cyber security at GE?

22   A.   Sure. I -- I currently deal with all of the

23 -- the product security related to GE's industrial

24 products, as well as cyber and operational security --

25 kind of, you know, protecting and defending the systems

1 that GE uses for its industrial Internet of things,

2 platform products.

3   Q.   So can you give us some examples of the kind

4 of work that you do?

5   A.   Yeah.   So we work with industrial Internet of

6 things in nuclear power plants, power generation

7 systems, and even renewable stuff.   We also handle water

8 purification processing systems, just about anything

9 that deals with critical infrastructure.   On the General

10 Electric sales, the industrial space, we handle the --

11 the global cyber warfare protection systems for -- for

12 General Electric.

13   Q.   As part of your job, do you work with the

14 government?

15   A.   Yes, I do.

16   Q.   And have you received any security clearance

17 from the U.S. Government?

18   A.   Yes, I have.

19   Q.   What is the highest level you've achieved?

20   A.   Highest level is top secret.

21   Q.   Were there any requirements for receiving that

22 top security clearance?

23   A.   Yeah.   Top secret requires extensive

24 background checks, polygraph lie detector tests, regular

25 renewals every five years.

1   Q.   And how long have you worked for GE?

2   A.   I've been with GE in my current position for

3   about three years now.

4   Q.   What kind of work did you do before you joined

5   GE?

6   A.   Before I joined GE, I was vice president,

7   chief technology officer for a variety of technology

8   companies, starting in about 1995.

9   Q.   Have you attended college?

10   A.   Yeah, I attended college for -- for a couple

11 of years.

12   Q.   Did you graduate?

13   A.   No. No, I did not. I did not graduate from

14 college.

15   Q.   Why did you decide not to pursue your degree?

16   A.   At the time, I was getting a lot of job offers

17 to go and actually work with technology. I was creating

18 during my college years, so I decided to pursue that

19 instead.

20   Q.   Now, do you have any ownership interest in

21 Packet Intelligence?

22   A.   No, I do not.

23   Q.   Do you have any stake in the outcome of this

24 lawsuit at all?

25   A.   No. No, I do not.

1   Q.   Why are you here today?

2   A.   I'm here today because I'm the lead inventor

3   in the patents in question in this case, and I wanted to

4   tell you a little bit about our invention.

5   Q.   What was the name of the company where you and

6   the rest of the inventors created that invention that

7   you just referred to?

8   A.   For most of the time that the invention was --

9   was being worked on, it was part of a company called

10   Technically Elite.

11   Q.   When did you start working for Technically

12   Elite?

13   A.   I was a co-founder of Technically Elite

14   with -- with three of my other friends, and we started

15   the company in 1989.

16   Q.   Now, can you tell us in general what the

17   invention was about?

18   A.   Yeah. In general, the invention was about

19   finding a kind of a new way to really get visibility

20   into monitoring traffic in networks.

21   Q.   What exactly is a network?

22   A.   So a network is the way that computers

23   communicate with each other, the way that they send and

24   receive information from one another. They -- they

25   exchange traffic between one another.

1   Q.   And can you explain what you mean by traffic

2 on a network?

3   A.   Yeah.   So the -- the closest thing I can come

4 up with is if we think about traffic on a highway or on

5 the roads.   You know, when we think about the roads,

6 they take us between, you know, different places we came

7 from and want to go to.   And when we -- when we look at

8 those roads, there's cars and trucks on them moving

9 around, and -- and the system of roads and -- and

10 highways is very much like a network.

11   Q.   And so in a network, what would the cars and

12 trucks be called?

13   A.   In a network, the cars and trucks would be

14 basically packets, you know, the -- think of those as

15 the things that have a place to -- to go to or that they

16 came from.

17   Q.   Can you describe a little bit more what

18 exactly a packet is on a network?

19   A.   Yes.   A -- a packet is kind of like chunks or

20 pieces of information that's moving on that network

21 between those computers.   And typically, a packet tells

22 you where it came from, where it may be going, and other

23 things about it.

24   Q.   Will you tell the jury a little bit about how

25 your invention came about?

 1   A.   Yes.   So the invention came about after --

 2   basically a long -- you know, years of -- of doing

 3   monitoring of networks.   What was -- what was happening

 4   was we were -- we were starting to realize that we

 5   needed a way to find the actual service or application,

 6   the thing that you were doing as a user on the network,

 7   and -- and there really wasn't a way to see that.

 8   We -- and we knew that we needed that visibility because

 9   it was important to understand how we as individuals and

10   users were using the services that we -- we wanted to

11   work with on the network.   That was the only reason for

12   the network to exist really.

13   Q.   Is the Internet a network?

14   A.   Is the Internet a network?   The Internet is a

15   collection of networks.   It's not a thing.   It's a --

16   it's a community of different networks that all come

17   together.

18   Q.   And around what time period was it that you

19   identified this issue with being able to identify

20   traffic on the Internet?

21   A.   We -- we started running into this problem

22   in -- in the -- in the late '90s, '97 time frame period.

23   Q.   What did the Internet traffic look like in the

24   early days?   Or in that time period?

25   A.   Yeah, in that time, it was -- in those -- in

 1 those early days in that time period -- I've got a slide

 2 to kind of help us understand, you know, what that --

 3 what that looked like because things have changed a lot.

 4   So if you look at -- if you look at the slide

 5 and you look at early websites, basically, they were

 6 pretty good at displaying texts, okay, and maybe a

 7 picture. And that was basically it, '95, '97 time

 8 period.

 9   And you can see here, you know, here's, you

10 know, a personal computer in that time period with a

11 display from a web page. It basically just has a story

12 about the Titanic sinking and a -- and a picture.

13   But what's important to note is that

14 typically, at this time, also, the place -- the server,

15 the place that you actually went to to get that, that

16 web page was typically one place, okay. In other words,

17 there was one -- one address that you went to as the

18 destination to ask to get that information, and that was

19 very typical of what we did with applications at that

20 time.

21   Q.   And how did that change as the Internet got

22 busier?

23   A.   Well, you know, it's interesting to see how

24 that evolution changed and -- and what was going on. So

25 what -- what I've also done is kind of given you a

 1 little bit of a view of what that -- what that looks

 2 like.

 3   So if we can go to the next slide that I've

 4 got here.

 5   If we look at -- if we look at what was going

 6 on and the -- and the changes that were happening, it's

 7 very similar to what we're seeing here in this picture.

 8   So we went from that single page that we

 9 talked about to -- to -- to an increase in the amount of

10 traffic, right. So the complexity was going up at that

11 time so that eventually we could get to a place where we

12 are today where we can actually, you know, look at and

13 -- and -- and -- and stream videos.

14   So the traffic levels were increasing, the

15 complexity of the application was increasing. Going

16 from just a single, you know, page to -- to actually

17 being able to present a -- you know, a complete

18 application or service.

19   Q.   So what are we seeing here on this screen?

20   A.   So -- so what we're seeing here is basically,

21 you know, a tablet that you would use to -- to view a

22 movie, in this case the movie the Titanic on something

23 like Netflix. So if you think about the volume of

24 traffic that were required to -- to actually bring that

25 video and that audio to you, it's really increasing,

1 and -- and the complexity is changing from that single

2 web page to what we're looking at today.

3   Q.   Can you talk a little bit more about how that

4 complexity is changing in terms of the traffic on the

5 network?

6   A.   Yeah, so if we look at the -- the traffic on

7 the network and how the -- how things are changing, I've

8 got a -- another slide that will show us what that looks

9 like for this particular video that we're actually going

10 through.

11   What's -- what's happening now, you know, when

12 we look at the Internet itself is there's usually more

13 than one place involved in a service or an application.

14 And this -- this movie is a very good example of what

15 that would look like.

16   And -- and that more that one place that's

17 involved is typically, let's say, the actual video

18 itself may be coming from one place because it's -- it's

19 significantly more information that has to be stored,

20 and it's more sensitive in how it's delivered to you.

21 You want to make sure that it streams cleanly and that

22 you actually see it and that it doesn't pause or stop.

23 But at the same time, there's also the richness of the

24 audio, right, what we listen to is just as important.

25 And that may be coming from a completely different

1 server. And so today, in the network, when we -- when

2 we look at traffic and the complexity that was changing

3 back then was bringing those things together to provide

4 a single service.

5   Q.   When you say "connections," what do you mean

6 by that?

7   A.   Well, when we talk about a connection, it has

8 to do with each of these different streams of

9 information that are coming to you through your

10 particular application.

11   So when we -- when we look at this particular

12 image that we're -- that I'm showing you right now, you

13 can see that it's broken up into two things that I just

14 described.

15   On the next slide I show you what those two

16 things look like.

17   So we have that one connection -- that one

18 connection flow that we have here; that is, that video

19 content that I described.

20   And then we have that second connection, you

21 know, which is -- which is indicated by that yellow

22 piece which is that audio that's streaming, you know, to

23 that tablet at that same time.

24   Q.   Using this example of showing a movie, what

25 was the problem that you and your team identified with

```
 1 connection flows?

 2      A.   So the -- the problem that we identified with

 3 at that time is that there was a challenge in being able

 4 to figure out how the connection flow that we see here,

 5 how those connection flows were related to each other.

 6           So how did they come together to bring that

 7 movie to you and you can see it.  And as you can see,

 8 without that, it would have been really difficult to

 9 know that it's the movie that you're watching that's

10 coming to your tablet at that particular time.

11           And so we -- we found that as a real

12 challenge, and -- and that -- and being able to -- to

13 come up with ways to look deep into the packets that

14 were coming at us in the monitors, we came up with --

15 with a new way to -- to actually create that

16 relationship, okay.  And -- and that -- that

17 relationship allowed us to -- to actually track and

18 monitor what was going on with those two independent

19 connection flows and bring it together into -- into a

20 single relationship.

21      Q.   And what exactly did you call that single

22 relationship?

23      A.   Yeah, so that single relationship is -- is

24 what we called a -- a conversational flow.  And you can

25 see that on the next slide as to how that -- how that
```

 1 | conversation flow comes together.
 2 | Q.   And so exactly what does this box that you've
 3 | drawn around the two connection flows show about a
 4 | conversational flow?
 5 | A.   So -- so what this is showing about the
 6 | conversational flow is that -- that we have looked into
 7 | the packets in -- in these -- in these connection flows
 8 | and that we've come up with an understanding of how the
 9 | connection flows relate to each other to bring that
10 | video to -- to your tablet and actually show that movie.
11 | And we've done that for -- for each of the packets in
12 | each of the connection flows, and that's how we create
13 | that conversation flow.
14 | Q.   Mr. Dietz, were you in the courtroom when Mr.
15 | Buresh said that connection flows and conversational
16 | flows are two different design choices?
17 | A.   Yes, I was.
18 | Q.   Is that an accurate statement?
19 | A.   No, it's not.
20 | Q.   And can you explain, please?
21 | A.   Yeah. So when you look at -- when you look at
22 | a conversation flow and a connection flow, remember what
23 | I just said, you know, earlier. A -- a connection flow
24 | is one of these streams, the video or the audio, okay.
25 | A conversation flow is a representation of what we've

1 learned about the packets in each of those connection

2 flows, okay, to make sure that we know that they are

3 part of that single conversation.

4   But it's -- it's still -- it still is made up

5 of -- of connection flows. So the concept of

6 understanding the source and the destination where

7 something is -- came from and where something's going to

8 is just as much, you know, important in the connection

9 flow as it would be in the conversation flow.

10   Q.   So are connection flows completely unrelated

11 to conversational flows?

12   A.   Well, there -- there -- if you look at a

13 connection flow and a conversation flow, the -- the

14 connection flow is one connection, right, and a

15 conversation flow can be one or more connections. So --

16 so the -- so to say that they're different from one

17 another, right, is -- is misunderstanding what it is

18 that was used to describe the -- the two -- the two

19 mechanisms.

20   Q.   Now, on these slides you've shown two

21 connections. In reality, how many connections might

22 there be in streaming a video?

23   A.   If any of you have mobile devices or if any of

24 you have computers in your house and a mobile device or

25 anything else in your home today that's hooked up to,

1 you know, broadband that's bringing video into your

2 home, you know that there's thousands, if not tens of

3 thousands of devices, you know, that we're using.

4   And on the servers today, because there's so

5 much content, there's so many different kinds of movies.

6 There's music. There's photos. There's tens of

7 thousands of devices, and tens of thousands to millions

8 of -- of different servers delivering all of that

9 content, you know, at the -- you know, at the same time.

10   So if you look at the number of connection

11 flows that there are, right, there's tens of thousands,

12 hundreds of thousands of connection flows that are all

13 constantly going on at the same time across the Internet

14 and across, you know, each of these provider networks

15 that you see here.

16   Q.   When we're talking about monitoring a network,

17 can you give us some examples of who it is that is

18 actually monitoring the network?

19   A.   Yeah, sure. Absolutely.

20   When you look at network monitors, even back

21 at the time when -- when we -- when we started with the

22 invention itself, you know, there were folks like

23 service providers or network providers or network

24 operators. And there's also what we call the Internet,

25 which is really a collection of -- of large

1 communication companies that are also using monitors to

2 monitor their piece of the Internet, if you think about

3 it that way.

4   So -- so those network operators and Internet

5 service providers, your ISP sometimes, like Comcast, are

6 folks that would monitor the networks.

7   Q.   And what exactly is a network operator?

8   A.   So a network operator in this particular

9 example is somebody that delivers the Internet to you.

10 So think about it as a Comcast, an AT&T, or a Verizon.

11 To you, they're -- they're operating the network that's

12 providing you with signal, and also, as we show in this

13 picture, they're what's connecting you to the rest of

14 the Internet.

15   So that -- so that network operator has a lot

16 of complexity to deal with. They need to figure out

17 what pieces of the Internet they want to hook up and

18 use, but they also -- they also need to make sure that

19 they manage the -- either the wired or wireless

20 network -- let's say it's Comcast in this case, the

21 wired network -- that there's enough bandwidth for all

22 of the homes on that side.

23   So a network operator is somebody that's

24 bringing that Internet and your service together.

25   Q.   Now, in talking about your invention and the

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 1  team that worked on it, who exactly was in that group

 2  that was working on the team?

 3       A.   So I've got a slide of -- of myself and all of

 4  the inventors.

 5            So there was myself, and then Mr. Maixner,

 6  Mr. Koppenhaver, Mr. Bares, Mr. Sarkissian, and

 7  Mr. Torgerson.

 8       Q.   And can you tell us a little bit about the

 9  process that led to the invention and how you worked

10  with the team?

11       A.   Yeah, sure.  So from the time we determined

12  that we had the problem, we started to get together as a

13  group on a quarterly basis.  And we would meet, you

14  know, face-to-face and tackle some of the tough

15  problems.  As you can imagine when you have a team,

16  there's a lot of folks that are working on different

17  aspects of it.  But then also on a monthly and sometimes

18  weekly basis, you know, we would get on conference calls

19  or we would exchange documents with each other to help

20  us make progress on solving the different problems.

21       Q.   And what time period are we talking about

22  here?

23       A.   This was -- it took us a -- you know, about a

24  year, 18 months in the '97, '98 time period.

25       Q.   And approximately how long did it take you and
```

1 your team to develop the invention?

2   A.   We had a lot of background knowledge, but the

3 actual invention itself took about a year to -- to -- to

4 actually bring to practice.

5   Q.   How did you and your team feel about your

6 invention?

7   A.   We were pretty excited about what we had

8 accomplished -- excited, but then we also didn't know

9 the real impact of it fully. Remember what I said, at

10 the time, we were just interested in getting that

11 visibility because we were making things that monitored

12 networks. And we didn't have that visibility from

13 looking anywhere in the network before. So we were

14 pretty excited about that.

15   But then we had a bunch of other problems to

16 solve, so we just kind of moved on to the next thing

17 once we got that completed.

18   Q.   Can you talk a little bit about the advantages

19 of your invention?

20   A.   Yeah. What was interesting about the

21 invention was at the time, we -- we started to notice

22 that there were other areas we could use this now that

23 we had that information. So one of them was quality of

24 service. We've talked a little bit about making sure

25 that you can, you know, see the video without any jitter

1 or buffering.

2   So we saw quality of service as a -- as a very

3 big, you know, area, and we had -- we had customers come

4 to us looking to find ways to take what we'd done and

5 put it in there.

6   Also, you know, network policy enforcement.

7 We talked about all of these different networks, and if

8 you think about yourself as a network operator, you need

9 to make sure you manage how you're making money and

10 paying for those connections, you know, back that we

11 talked about earlier on each side of the network. So

12 that was another big thing, having different network

13 policies to drive different traffic.

14   And the last thing that we saw was basically

15 security. You know, bad stuff can come over, rogue

16 applications, and we started noticing that seeing the

17 different ways that those -- those connection flows can

18 be associated with each other helps us decide is this

19 really a good thing or a bad thing? And if it is a good

20 thing, we should let it through so that you can actually

21 watch your movie. So those are just some areas that we

22 saw.

23   Q.   You mentioned buffering. Is that the same

24 issue with buffering that Mr. Gillam referenced where

25 you would see the icon circling?

 1   A.   Yeah.   Yeah, absolutely.   That same core

 2 quality.   You know, buffering is a term because it means

 3 that the network is never -- is never perfect, right,

 4 and it always changes.   You know, when you go in and out

 5 of wireless coverage, sometimes things happen.   So we

 6 used buffers as a way to at least to hold enough to

 7 present you with what you were looking for until the

 8 connection got -- was good again.

 9   So when you see buffering, it's when the

10 buffer is empty.   There's no more water in the pail.   So

11 when you went to turn the pail over, nothing came out.

12 No more video.

13   Q.   So did your invention help solve problems

14 associated with that buffering quality issue?

15   A.   Yeah, because -- because now we can see how

16 all of the packets and traffic were related to each

17 other, we were able to then give that information,

18 through our invention, to -- to others that were making,

19 you know, network equipment and things along those lines

20 so that they could actually make sure that the pail

21 never got empty, okay, or reroute those packets

22 someplace else so that it could keep filling the pail

23 fast enough.

24   Q.   Why did you and your team decide to file

25 patent applications for your inventions?

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 1        A.    Yeah.    That's a good question.    As my wife

 2  would attest, I get very excited about technology and

 3  ideas.    I still invent things today.    Making money off

 4  them and protecting them is not necessarily the first

 5  thing that comes to mind.    So it was about the time that

 6  we had realized that -- that what we had done was really

 7  a big breakthrough, that we were in a company meeting,

 8  and our CFO at the time, Jack Lazar, said to me, hey,

 9  Russ, we probably want to look at protecting this

10  intellectual property by going through some kind of

11  patent filing process, if it really is going to be

12  something that's significant for us as a company.    So --

13  so Jack made sure that I had introductions to start that

14  process.

15              THE COURT:    Mr. Dietz, please refrain

16  from referring to individuals by first name only.

17              THE WITNESS:    Oh, I'm sorry.

18              THE COURT:    Let's continue.

19        Q.    (By Ms. Abdullah)    Why did -- why was it

20  important for the company to protect its intellectual

21  property?

22        A.    Well, the -- the -- the company had invested a

23  lot of time.    You know, many man hours were spent by

24  myself and the other inventors.    And in addition to

25  that, you know, invested millions of dollars in -- in
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 1  bringing the invention to practice so that we could

 2  actually use it and -- and deliver it as a solution.  So

 3  that was an important part of -- of protecting the

 4  intellectual property.

 5              MS. ABDULLAH:  I'd like to call up on the

 6  screen now PX-3, please.

 7      Q.   (By Ms. Abdullah)  And, Mr. Dietz, do you

 8  recognize this document?

 9      A.   Yes, yes, I do.

10              MS. ABDULLAH:  And if we could zoom in on

11  the top half of the page.

12      Q.   (By Ms. Abdullah)  Tell the jury what this is,

13  please.

14      A.   Yeah, this is -- this is the 7 -- '725 patent,

15  processing protocol specific information in packets

16  specified by a protocol description language.

17      Q.   And is this one of the patents we've been

18  talking about here today?

19      A.   Yes, it is.

20      Q.   And are you one of the named inventors on

21  here?

22      A.   Yes, I am.

23              MS. ABDULLAH:  If we could now call up

24  PTX-7.

25              And, again, zoom in on the top portion of
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 1  that.

 2      Q.    (By Ms. Abdullah)   Do you recognize this

 3  document?

 4      A.    Yes, I do.

 5      Q.    Tell us what it is, please.

 6      A.    This is the '751 patent, re-using information

 7  from data transactions for maintaining statistics in

 8  network monitoring.

 9      Q.    And is this another one of the patents that

10  we've been talking about today?

11      A.    Yes, it is.

12      Q.    And, again, are you a named inventor on this

13  patent, as well?

14      A.    Yes, I am.

15              MS. ABDULLAH:   And now if we could take a

16  look at PTX-9.

17      Q.    (By Ms. Abdullah)   Do you recognize this

18  document?

19      A.    Yes, yes, I do.

20      Q.    And what is this document?

21      A.    This is the -- the '789 patent, method and

22  apparatus for monitoring traffic in a network.

23      Q.    And is this also one of the patents that we've

24  been talking about today?

25      A.    Yeah, yes, it is.
```

1   Q.   And, again, are you a named inventor on this

2   patent?

3   A.   Yes, yes, I am.

4   Q.   Now, once you filed the applications for these

5   patents, what happened to Technically Elite, the company

6   that you were working at?

7   A.   So right after the -- the patents were filed,

8   in about that same time period, we -- we -- we did

9   several things, we changed the company named to

10 Apptitude, it was referred to earlier today. And in --

11 in that same time period was about the -- that was the

12 mid-2000 time period, and if -- if -- if everybody

13 remembers a little bit about that time period, it was a

14 time period where, you know, the -- the Internet and

15 technology investments kind of got harder to happen, we

16 had a little bit of the precursor of the tech bubble

17 burst. And we went out and looked for ways to -- to

18 actually continue what we were doing outside of

19 traditional investments through venture capital, and

20 that was to try to see if we could join forces with

21 another company. And we sold -- we sold Apptitude to

22 Hi/Fn in August of 2000.

23   Q.   So around the time that Technically Elite

24 changed its name to Apptitude in 1999, had you filed the

25 patents by then?

 1   A.   Yes, we had.   We -- we had filed -- we had

 2   filed a provisional application in June of 1999.

 3   Q.   And you referenced a -- a tech bubble burst.

 4   Could you explain a little bit more to us what that

 5   means and what that refers to?

 6   A.   Yeah.   So it was in that 2000 time period, and

 7   it probably went through 2006 or 2007, right where, you

 8   know, a whole lot of money had been invested in the --

 9   in -- in the Internet start-ups.   And -- and those

10   Internet start-ups, though, all didn't turn into, you

11   know, real -- real viable businesses so the investments

12   in those areas really, you know, dried up.   And we saw a

13   pretty significant recession, you know, starting in late

14   2000, early 2001 through that 2006, '7 time period.

15   Q.   And when Hi/Fn purchased your company

16   Apptitude, why was Hi/Fn interested in the company?

17   A.   Hi/Fn was very interested in the -- in our

18   technology.   The company was in the network security and

19   network optimization space, and they were very

20   interested in using the technology to further their

21   efforts in that area.

22   Q.   When you say "the technology," are you

23   referring to some of the things you were working on when

24   you were working on the invention?

25   A.   Yes, yes, that's right.

```
 1        Q.    And how much did Hi/Fn pay for Apptitude?

 2        A.    It was about $80 million.

 3        Q.    Now, when Hi/Fn bought Apptitude, did you then

 4   go on to Hi/Fn and join their team?

 5        A.    Yes, I did.  I -- I joined Hi/Fn as VP and --

 6   and chief technology officer.

 7        Q.    And how long were you at Hi/Fn?

 8        A.    It was about eight, nine years I was at Hi/Fn,

 9   until -- until early 2009.

10        Q.    And what happened in 2009?

11        A.    In -- in the -- in the 2009 time period, Hi/Fn

12   had gone through another effort around refocusing the

13   company even more on -- on network security, storage

14   security, network optimization, storage optimization.

15   And -- and -- and they ran out into the market.  And

16   about the February time period, they entered into an

17   agreement to be purchased by Exar.  And then I -- I

18   moved on to -- to SafeNet in about that same time

19   period.

20        Q.    Now, did Apptitude, Technically Elite, and

21   Hi/Fn have a product that you were working on during the

22   time period you were developing your inventions?

23        A.    Yes, we did.

24        Q.    And can you tell me what the -- the specific

25   product line was that you were working on at that time?
```

1   A.   Yeah.   We -- we were working on a product line

2 called MeterFlow at the time.

3   Q.   Were there different versions of MeterFlow

4 over the years?

5   A.   Yes, absolutely.   We had over the time period

6 that MeterFlow was in the market, we had both software

7 versions of MeterFlow and -- and also hardware versions

8 of MeterFlow.

9   If you remember, I talked a little bit earlier

10 about performance and different kinds of elements that

11 we -- that we needed to deal with, so there were some

12 elements that could be covered by software in a

13 processor code and other elements that required us to

14 look at chips or semiconductors.

15   And Hi/Fn, by the way, was a fabless

16 semiconductor company.   So they made chips.   And so we

17 were -- we were working in both of those different

18 areas.

19   Q.   So with respect to the software that you're

20 talking about, the MeterFlow software, was that ever

21 sold?

22   A.   Yes, it was.   It was sold as a product for

23 six, seven, eight years.

24   Q.   And why was it discontinued?

25   A.   Well, basically, there were two things that

1 were happening as far as the software being

2 discontinued. We had -- the first was there was, again,

3 that shift that I discussed earlier and the company

4 getting very focused around, you know, network and

5 storage optimization.

6   They also got into more bringing complete

7 solutions card -- cards for computers to market. So

8 they were making very specific investment decisions

9 about where they wanted to take things.

10   And at the same time, the -- the pieces of

11 MeterFlow that they wanted to incorporate as we did as

12 -- as a team into -- into some of the products, that --

13 that process had happened.

14   You know, so between -- you know, stopping the

15 investments by focusing in certain areas and then

16 integrating what we had in the invention, you know, we

17 -- we basically decided to stop selling the invented

18 solution.

19   Q.   Was there anything wrong with the way the

20 product was working that was the reason you discontinued

21 it?

22   A.   No, there wasn't anything wrong with it. As a

23 matter of fact, you know, we had continued to advance it

24 in many ways over that -- over that time period. And we

25 had a lot of, you know, happy customers at the time.

```
 1        Q.    You mentioned that there was a hardware

 2 version, as well?

 3        A.    Yes.

 4        Q.    Was that -- was that ever sold?

 5        A.    So, no, the -- the hardware device itself

 6 that -- that we were -- that we were creating, we

 7 actually never did sell that hardware device, that

 8 specific chip.

 9        Q.    And why did you not sell it?

10        A.    Well, we -- we got to a place where we had

11 completed the -- the device, and -- and we were ready to

12 go into a process of sampling and -- and actually

13 delivering it to market.  But that last step that you go

14 through when you're about to do that is a multi-million

15 dollar investment that you have to make.  And if you

16 remember what I just said earlier, we had just made some

17 decisions about re-prioritizing things in the company.

18 And even though we were ready to bring it to market, we

19 decided, based on those other decisions, not to make

20 that final investment.

21        Q.    So how far in development had that hardware

22 product gotten at that point?

23        A.    It was completed.  As a matter of fact, it was

24 the second version of it, and it was completed.  And we

25 had -- we done what we call in the semiconductor world,
```

1 we taped out the device.

2   Q.   And so was there anything wrong with the way

3 the product was working in hardware that led you to not

4 make that investment?

5   A.   No, there was nothing wrong with the product

6 that didn't -- that was not the reason we didn't make

7 the investment. As I stated earlier, we had taken the

8 pieces that we wanted from that invention and

9 incorporated it into other products that Hi/Fn was

10 selling. And making a standalone solution was no longer

11 something the company wanted to invest in.

12   Q.   And remind us again, why did the company not

13 want to invest in that?

14   A.   So as I said before, the -- there was no need

15 to -- to make that investment because we were starting

16 to focus more on card level solutions for network and

17 storage systems for security and capacity optimization.

18 And some of the other elements that we had in the

19 invention and the hardware had been incorporated into

20 those card level solutions.

21   Q.   Now, you mentioned that the company did sell

22 MeterFlow software. How did you go about selling that

23 software to your customers?

24   A.   Well, the same way you would sell other

25 software, even as we use software. So we had to go

```
 1  through a process of -- of licensing, you know, that

 2  software.

 3      Q.   Can you give us an example of how software

 4  licensing works that we might encounter?

 5      A.   Yeah, sure.  So software licenses, how does

 6  that work?

 7           So if -- if any of you have used anything for

 8  Microsoft, whether it's the operating system or the word

 9  processor, Microsoft Word, when you -- when you actually

10  purchase that software, there's -- there's a license

11  that's given to you to actually use that software.  We

12  did the same thing for the MeterFlow software, except

13  instead of it being a word processor, it was -- it was a

14  set of computer code that delivered outcomes of what we

15  talked about for -- for finding conversational flows,

16  right, for implementing MeterFlow.

17           And so same kind of, you know, license, except

18  now we're licensing code that -- that folks were going

19  to put into, you know, other computer software.

20                MS. ABDULLAH:  I'd like to now call up

21  DTX-190, and if we can go to the page labeled Exar

22  000200.  And if we could just zoom in on the top part of

23  that.

24      Q.   (By Ms. Abdullah)  Mr. Dietz, do you recognize

25  this document?
```

1   A.   Yeah.   This looks like the beginning of -- of

2 one of our software license agreements for that source

3 code that I described.

4   Q.   And can you tell from this which customer was

5 involved with this?

6   A.   Right in the first paragraph it mentions Fluke

7 Networks.

8   Q.   And what kind of products did Fluke sell at

9 that time?

10   A.   At that time, Fluke was selling handheld

11 network test equipment.

12   Q.   And what did this software agreement allow

13 them to do?

14   A.   We -- Fluke was a -- a customer of ours for --

15 for many years.   This particular license agreement, when

16 we first started working with Fluke was for -- for the

17 MeterFlow software itself.

18   Q.   Did this give them the right to use your

19 patents?

20   A.   No.   It wouldn't have given them the explicit

21 rights to use the patents.

22   Q.   Is intellectual property mentioned in this

23 agreement?

24   A.   If -- if I remember, we typically had

25 intellectual property agree -- sections in this document

1 to protect the -- the person that was licensing it from

2 running into issues related to potential infringement

3 when they were using that particular software.

4   MS. ABDULLAH: If we can go to the third

5 page of this document and blow up Section 2.7, please.

6   Q.   (By Ms. Abdullah) And if you can read for us,

7 Mr. Dietz, the first sentence of that section, please?

8   A.   Yeah -- no, absolutely. Licensor shall retain

9 all rights, title, and interest, including all

10 intellectual property rights, in and to the Licensed

11 Software and Licensor Documentation.

12   Q.   And the licensor in that sentence, that would

13 be your company, Hi/Fn?

14   A.   Yeah, that's correct.

15   Q.   Now, were you in the courtroom when Mr. Gillam

16 said that your invention was not successful?

17   A.   Yes, I was.

18   Q.   Do you agree with that statement?

19   A.   No, I don't.

20   Q.   Can you explain, please?

21   A.   So the invention was placed into a lot of

22 different components and elements in the MeterFlow

23 product line, but it was also, you know, used in --

24 in -- in other solutions and components within Hi/Fn.

25 So we had well over, if I remember, probably -- I don't

1 know, 30, 50 customers using, you know, the -- the

2 MeterFlow code base that -- that contained -- and

3 certain -- and certain versions of it contained elements

4 of -- of the invention.

5   Q.   And when you say customers, would that be

6 people like you and me, or large companies?

7   A.   Yeah, sorry. That would be -- that would be

8 the companies that provide solutions that -- that --

9 that actually support the things that you and I do, so

10 network systems providers. I think Cisco was mentioned

11 earlier today, and -- and other folks like Fluke who

12 make test equipment for networks. So -- or -- or

13 even -- even people that make in some cases servers and

14 other applications that are connected to networks.

15   Q.   What was the reaction in the industry to your

16 invention and your team's invention?

17   A.   You know, initially, we had -- we had very

18 good reaction from -- from the customers that were using

19 the implementation.

20   Over the years, what's been interesting to me

21 is how that's -- that's evolved. I've -- I've seen --

22 it's hard not to peek every once in a while at the

23 citations for patents that you have. And when you see

24 something like 500 or more people referencing something

25 you -- you did with a team of people, it's pretty --

1 pretty exciting.

2   The other thing is, is that, you know, I've

3 worked in a variety of different executive roles. I get

4 to interview people all the time. And I'm absolutely

5 astonished how many of them tell me some way through --

6 some time through the interview that they've read this

7 or one of the collection of these patents and -- and

8 pretty impressed that we thought about it. The way to

9 do that at that time period, it was -- they're pretty

10 impressed by -- by that kind of thought. And they

11 wanted to see what it was like to work with somebody

12 like, that so...

13   Q.   When you say they were impressed by the time

14 period, can you explain a little bit more?

15   A.   What we consider to be routine today was not

16 routine in 1997, 1998 as we -- as we talked about

17 earlier. Systems back then, you know, didn't look like

18 they do now. I think we take for granted sometimes the

19 advancements that we've made. And so that's why --

20 that's why they were impressed.

21   Q.   And so that problem that you and your team of

22 inventors identified, did your invention work to

23 actually solve that problem?

24   A.   I would say for myself personally, yes. And I

25 think the facts in the market and in the technology

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 1  landscape say that that's the case, as well.

 2                  MS. ABDULLAH:  Pass the witness.

 3                  THE COURT:  All right.  Ladies and

 4  gentlemen, before the Defendants cross-examine Mr.

 5  Dietz, we're going to take a short recess.

 6                  You may simply close your juror notebooks

 7  and leave them in your chairs, if you like.  During the

 8  recess, please follow all my instructions, including not

 9  to discuss the case among yourselves.  And we'll be back

10  in here shortly to continue with Defendants'

11  cross-examination of the witness.

12                  The jury's excused for recess at this

13  time.

14                  COURT SECURITY OFFICER:  All rise for the

15  jury.

16                  THE COURT:  You go first, Mr. Smiley.

17                  THE JUROR:  I go first?

18                  THE COURT:  Everybody follows you.

19                  (Jury out.)

20                  THE COURT:  The Court stands in recess.

21                  (Recess.)

22                  (Jury out.)

23                  COURT SECURITY OFFICER:  All rise.

24                  THE COURT:  Be seated, please.

25                  All right.  Mr. Dietz, you may return to
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 1  the witness stand.
 2                  THE WITNESS:  Thank you, Your Honor.
 3                  THE COURT:  And defense counsel, if
 4  you're going to -- whoever's going to cross the witness,
 5  may go to the podium and get ready.
 6                  And I'm correct all the binders to be
 7  passed out have been passed out?
 8                  MR. BURESH:  Yes, Your Honor.
 9                  THE COURT:  All right.  Let's bring in
10  the jury, please.
11                  COURT SECURITY OFFICER:  All rise for the
12  jury.
13                  (Jury in.)
14                  THE COURT:  Please be seated.
15                  We'll now proceed with the
16  cross-examination of the witness by the Defendants.
17                  Mr. Buresh, you may proceed.
18                  MR. BURESH:  Thank you, Your Honor.
19                       CROSS-EXAMINATION
20  BY MR. BURESH:
21      Q.   Mr. Dietz, my name is Eric Buresh, it's nice
22  to meet you.
23      A.   It's nice to meet you, Mr. Buresh.
24      Q.   I want to start, if it's all right with you,
25  by discussing MeterFlow, would that be all right?
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 1        A.    Sure.  Sounds good.

 2        Q.    When did you start working on the MeterFlow

 3   project?

 4        A.    Let's see, the -- the product line itself?

 5        Q.    The product's called MeterFlow, when did you

 6   start working on that?

 7        A.    The -- the products -- the MeterFlow products,

 8   we started working on those, I would say, in the 1996

 9   time period.

10        Q.    And when did you first have a MeterFlow

11   product that was ready for sale?

12        A.    So the MeterFlow product line was -- was ready

13   for sale the first, I would say, in 1997.

14        Q.    Did you have a specific name for that product?

15        A.    We had -- the first MeterFlow product?

16        Q.    Yes, sir.

17        A.    MeterFlow C-CODE.

18        Q.    And was that the software version that you

19   were talking about earlier?

20        A.    That -- that was, yeah, an early version of

21   the software, yes.

22        Q.    And what company were you at, at the time of

23   this MeterFlow C-CODE?

24        A.    Technically Elite.

25        Q.    Mr. Dietz, when did Technically Elite become
```

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 1  Apptitude, what time frame?

 2       A.    I believe it was the fall of 1999.

 3       Q.    And at that point in the fall of 1999, was

 4  there a different product other than MeterFlow C within

 5  the MeterFlow line?

 6       A.    There -- there were different versions and

 7  different products, yes.

 8       Q.    Were the products still called MeterFlow C at

 9  that point in time?

10       A.    They all came under that -- the MeterFlow C

11  product line.

12       Q.    And when was Apptitude sold to Hi/Fn?

13       A.    In August of 2000, I believe.

14       Q.    Are you familiar with networking speeds,

15  gigabytes?

16       A.    Absolutely.

17       Q.    What was the fastest speed that you got

18  MeterFlow C to operate at?

19       A.    In the -- in the -- in that '96, '7, '8 time

20  frame.  I believe it was gigabits per second.

21       Q.    One gigabit per second?

22       A.    That sounds about right.

23       Q.    I believe you testified that systems in that

24  time frame don't look the same as systems now; is that

25  correct?
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 1        A.    Yes.

 2        Q.    Now, on the slides that you used during your

 3  direct examination --

 4                   MR. BURESH:   If we can pull up Slide No.

 5  6.

 6        Q.    (By Mr. Buresh)   When was the first iPad

 7  released?

 8        A.    Wow.   I -- I don't recall exactly.   Some time

 9  in the 2000s, yeah.

10        Q.    Was it 2010, seem about right?

11        A.    That wouldn't surprise me.

12        Q.    So networks had changed a lot between 1998,

13  1999, and 2010, correct?

14        A.    Absolutely.

15        Q.    In your demonstrative here on Slide 6, you

16  also have Netflix; is that correct?

17        A.    Yes.

18        Q.    Netflix started to -- getting disks through

19  the mail, do you remember that?

20        A.    Sure do.

21        Q.    But that's not what you're depicting here,

22  right?

23        A.    Absolutely not.

24        Q.    You're depicting streaming?

25        A.    Correct.
```

 1   Q.   Do you know when Netflix streaming became

 2 available?

 3   A.   Not -- not precisely. But, again, probably,

 4 you know, the 2000 -- somewhere in the 2000, 2010, in

 5 that 10-year period somewhere.

 6   Q.   So networks in this time frame that you've

 7 depicted here are quite a bit different than the

 8 networks you were dealing with in the 1998, 1999 time

 9 period, weren't they?

10   A.   Yes.

11   Q.   Now, at some point you started a project to

12 transition from software to hardware, that was your

13 testimony, within the scope of the MeterFlow product

14 line?

15   A.   We actually had them going on in parallel.

16   Q.   Okay. What do you call the hardware side of

17 the MeterFlow product line?

18   A.   Internally, it was called MeterFlow

19 Accelerator.

20   Q.   And why did you call it the accelerator?

21   A.   At the -- at the time it was to -- to deal

22 with the faster speeds that networks were heading

23 towards.

24   Q.   You were trying to accelerate MeterFlow C?

25   A.   We were -- we were trying to accelerate the

 1 process of -- of -- of looking at traffic.

 2   Q.   Because you needed to go at speeds faster than

 3 a gigabit even then, right?

 4   A.   At that time, yes.

 5   Q.   And this hardware embodiment that you were

 6 attempting to build, was that taking place at Hi/Fn?

 7   A.   It continued on at Hi/Fn, yes.

 8   Q.   But it started at Apptitude?

 9   A.   At -- at Technically Elite.

10   Q.   Thank you.

11   So at Hi/Fn, did you ever complete -- and let

12 me rephrase that.

13   Did you ever bring to market the MeterFlow

14 Accelerator?

15   A.   No.

16   Q.   That project never made it through even

17 building the actual chip, right?

18   A.   We never produced the chip.

19   Q.   So the final and -- and fastest product you

20 brought to market was a gigabit?

21   A.   No.

22   Q.   In the MeterFlow product line?

23   A.   Again, I -- again, I -- it's -- it's software,

24 so I'd have to say no.

25   Q.   Now, at the time of the sale between Apptitude

```
 1  and Hi/Fn, did Apptitude have any other technology that

 2  it was selling other than MeterFlow?

 3       A.   Yes.

 4       Q.   Different product lines?

 5       A.   Yes, we did.

 6       Q.   Could you name one or more?

 7       A.   Sure.  We had -- we had MeterWorks, MeterWare,

 8  and a variety of different kinds of -- of hardware

 9  meters or probes.

10       Q.   Now, did MeterWorks use conversational flows?

11                 MS. ABDULLAH:  Objection, outside the

12  scope and calls for expert opinion.

13                 THE COURT:  Sustained.

14       Q.   (By Mr. Buresh)  So we have MeterWorks and

15  MeterWare.  Can you tell me about how much in dollar

16  volume those products were selling?

17                 MS. ABDULLAH:  Objection, outside the

18  scope of the direct.

19                 MR. BURESH:   Your Honor?

20                 THE COURT:  That's overruled.

21                 MR. BURESH:  Thank you.

22                 THE COURT:  I sustained the earlier

23  objection because it called for an opinion.  This is not

24  an expert witness.

25                 Let's proceed.
```

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 1        A.    So I don't recall.

 2        Q.    (By Mr. Buresh)  Were there any other products

 3  other than MeterWorks or MeterWare at the time of the

 4  transaction between Apptitude and Hi/Fn?  And I'm

 5  excluding MeterFlow.

 6        A.    The -- the other products were the -- again,

 7  the hardware probe products that we had exactly, yes.

 8        Q.    Could you tell me on a percentage basis the

 9  amount of revenue coming into Apptitude for MeterFlow

10  versus these other products?

11        A.    It was probably a smaller -- a much smaller

12  percentage at the time.

13        Q.    And -- and to clarify, which was smaller?

14        A.    I'm sorry, the -- the MeterFlow product at

15  that time would have been smaller.

16        Q.    How much smaller?

17        A.    I don't know -- I don't know specifically, but

18  it would have been, you know, smaller.

19        Q.    Less than 10 percent?

20        A.    Again, I -- I don't -- I don't know

21  specifically.

22        Q.    But it is safe to say that at the time Hi/Fn

23  bought Apptitude, there was other product lines in play?

24        A.    Yes.

25        Q.    Now, at Hi/Fn, I believe you said you had
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 1  the -- some fairly significant role.  What was it?

 2       A.   At Hi/Fn, I was -- I was VP and CTO.

 3       Q.   Chief technology officer?

 4       A.   Yeah, correct.

 5       Q.   So when the MeterFlow accelerator project was

 6  discontinued -- is that a fair word?

 7       A.   Sure.

 8       Q.   When it was discontinued, were you at the helm

 9  making that decision?

10       A.   Yes, I was.

11       Q.   Did you discontinue sales efforts while at

12  Hi/Fn on the MeterFlow C project?

13       A.   I don't recall specifically.

14       Q.   Do you have a recollection of continuing to

15  actively sell the MeterFlow C project at Hi/Fn?

16       A.   Again, I -- I -- I don't recall specifically

17  when the sale ended.

18       Q.   Well, how specifically are you being, can you

19  give me a time frame where it stopped being actively

20  sold?

21       A.   As I -- I think I -- in my earlier testimony,

22  I -- I believe that we were -- we were talking about

23  the -- I think I mentioned the 2005 or '6 time frame was

24  when MFA was -- you know, the MeterFlow accelerator

25  decision was made.
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 1        Q.    The decision to discontinue that project?

 2        A.    Yes.

 3        Q.    And so are you saying that it was about that

 4 same time that you discontinued actively selling

 5 MeterFlow C?

 6        A.    I don't recall specifically.

 7              MR. BURESH:   Can we have Slide 4 of Mr.

 8 Dietz's demonstratives?

 9        Q.    (By Mr. Buresh)   Now, this slide that we're

10 looking at on the screen, Slide 4, Mr. Dietz, describes

11 connection flows; is that correct?

12        A.    Yes.   That's what my earlier testimony was.

13              MR. BURESH:   If we could go to Slide 5,

14 please.

15        Q.    (By Mr. Buresh)   This is also labeled at -- by

16 the iPad.   It's connection flows?

17        A.    Correct.

18        Q.    Now, earlier, during your direct testimony,

19 you described how these connection flows worked for us,

20 didn't you?

21        A.    Yes.

22        Q.    Now, earlier in this case, you testified that

23 you couldn't define connection flows.   Didn't you

24 testify to that?

25        A.    I don't recall saying I couldn't define them.
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 1        Q.    Did you testify that you couldn't relate

 2   connection flows to any specific definition?

 3        A.    Again, I -- I don't recall that in my

 4   testimony.

 5        Q.    You have a binder in front of you?

 6        A.    Yes.

 7        Q.    And if you could, turn with me to the

 8   deposition transcript.  It should be the first portion

 9   of your binder.

10        A.    Yeah.

11        Q.    Do you recall being deposed in this case?

12        A.    I do.

13        Q.    And you testified under oath, correct?

14        A.    Yes.

15        Q.    Just like you're testifying here today?

16        A.    Correct.

17        Q.    And you were asked questions by Sandvine's

18   lawyers during that deposition, correct?

19        A.    Yes, I believe so.

20        Q.    I'm going to ask you to turn to Page 250 of

21   your transcript.  Are you with me?

22        A.    I am there, 250.

23        Q.    Okay.  Let's go to the -- Line 24, please.

24        A.    Yes.

25        Q.    And you were asked, Mr. Dietz:  Are you
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 1  familiar with the term "connection flow"?

 2          Do you see that question?

 3      A.   Yes, I do.

 4      Q.   Now we go to Page 251, please.

 5      A.   Yeah.

 6      Q.   And Line 4, you answered:  Not specifically,

 7  but I thought I saw something in here when I was going

 8  through it about it.

 9          Do you see that testimony?

10      A.   I do.

11      Q.   And so at that point in time -- let me back up

12  a step.  This is March 15th of 2017, correct?

13      A.   Yes, that's correct.

14      Q.   And I feel like I stammered there, so I'm

15  going to say March 15th, 2017, for the court reporter

16  again.

17          You were asked another question:  Have you

18  ever heard the term "connection flow"?

19          This is Line 7.  Do you see that?

20      A.   I do.

21      Q.   And you testified:  Again, I -- I -- I can't

22  relate connection flow to any specific term and

23  definition.

24      A.   I see that.

25      Q.   Was that your testimony under oath?
```

```
 1        A.   Yes.

 2        Q.   On March 15th, 2017?

 3        A.   Yes.

 4        Q.   So at that time when you were being questioned

 5  by Sandvine's lawyers to gain information about this

 6  case, you couldn't tell us what a connection flow even

 7  was, could you?

 8        A.   At this -- at this time, I could not recall

 9  what a connection flow was.

10        Q.   And today, when you're being asked questions

11  by Packet Intelligence's lawyers, you have a full

12  explanation, including animations, don't you?

13        A.   Yes.

14        Q.   Now, Mr. Dietz, you're a consultant for Packet

15  Intelligence, aren't you?

16        A.   Yes, I am.

17        Q.   You have a contract with them?

18        A.   I do.

19        Q.   And they're paying you?

20        A.   Yes.

21        Q.   By the hour?

22        A.   That's correct.

23        Q.   Even to testify here today?

24        A.   Yes.

25        Q.   And at the time of your deposition, you were
```

 1 getting paid then, too, by Packet Intelligence; is that

 2 correct?

 3   A.   It's -- except for the time during the

 4 deposition, yes, that is correct.

 5   Q.   So the payment isn't the issue, right, in the

 6 difference between your testimony?

 7   A.   I -- I don't understand.

 8   Q.   I withdraw the question.

 9   Now that you have an understanding of

10 connection flow, you had testified that connection flows

11 and conversational flows, as I heard your testimony,

12 were the same thing?

13   A.   That's what my testimony was.

14   Q.   In fact, you testified that you disagreed with

15 me, right?

16   A.   Yes.

17   Q.   Do you have a copy -- you have copies of all

18 the patents in front of you from your direct

19 examination?

20   A.   I do not.

21   Q.   Do you have a copy of the '789 patent in front

22 of you?

23   A.   Yes, I do, sorry, hold on.

24   Q.   No problem.

25   A.   Yes, I have that.

 1   Q.   Do you understand what a column of a patent

 2 is?

 3   A.   Yes, I do understand a column of the patent.

 4   Q.   Can you tell the jury how to find Column 2

 5 while you're doing the same thing?

 6   A.   Tell the jury how to find Column 2?

 7 I believe it is the column to the right of Page 1.

 8   MR. BURESH: If we could zoom in on

 9 Column 2.

10   And specifically Line 42.

11   Q.   (By Mr. Buresh)   And could you explain to the

12 jury, please, Mr. Dietz, where the lines of a patent may

13 be found?

14   A.   Sure.   They're the numbers running down the

15 center line -- line between 1 and 2, you go down.

16   Q.   I'm looking at Line 42 of Column 2 of the '789

17 patent.   This was your patent, correct?

18   A.   Yes, that's correct.

19   Q.   And it states: Some prior art packet monitors

20 classify packets into connection flows.

21   Do you see that?

22   A.   Yes.

23   Q.   The next sentence states: The term

24 "connection flow" is commonly used to describe all the

25 packets involved with a single connection.

```
 1              Do you see that?

 2       A.    Yes, I do.

 3       Q.    The next sentence begins:   A conversational

 4  flow, on the other hand.

 5              Do you see that?

 6       A.    Yes.

 7       Q.    Would you agree with me that "on the other

 8  hand" is a term of distinction?

 9       A.    Yes.

10       Q.    So there is a distinction between

11  conversational flows and connection flows, are there

12  not?

13       A.    Yes.

14       Q.    And you would agree with me that packet

15  monitors that monitored connection flows were already in

16  the prior art at the time of your invention?

17                   MS. ABDULLAH:   Objection, calls for

18  expert opinion.

19                   THE COURT:   Overruled.

20                   Restate the question, Counsel.

21       Q.    (By Mr. Buresh)   You would agree with me that

22  packet monitors that classify packets into connection

23  flows were already in the prior art?

24       A.    Yes, that's what this is stating.

25       Q.    And you agree with that?
```

```
 1        A.   Yes, I do.

 2        Q.   Would you agree with me that it is important

 3  to distinguish between conversational flows and

 4  connection flows in the context of your invention?

 5        A.   Within the context of the invention, yes, as

 6  we've discussed earlier.

 7        Q.   What is your hourly rate?

 8        A.   $195.

 9             MR. BURESH:  Go to Slide 7 of Mr. Dietz's

10  demonstratives, please.

11        Q.   (By Mr. Buresh)  Now, Mr. Dietz, pictured on

12  Slide 7, as I understand it, are the other inventors

13  that you worked with; is that correct?

14        A.   Yes, that is.

15        Q.   What did Joseph Maixner do?

16        A.   Mr. Maixner worked on software.

17        Q.   Did he write the code for MeterFlow C?

18        A.   He did -- he did write code for -- for -- for

19  MeterFlow, yes.

20        Q.   Did you work on the actual software

21  implementation of MeterFlow C?

22        A.   Yes, I did.

23        Q.   Did you write the code?

24        A.   Some of it.

25        Q.   If Mr. Maixner testified that he wouldn't let
```

1 you touch the code, would you disagree with him?

2   A.   At some point, definitely, I would agree with

3 Joe -- I'm sorry, Mr. Maixner.

4   Q.   So you would agree with him even though you

5 just said that you did?

6   A.   I -- Mr. Maixner joined -- joined the team

7 later.

8   Q.   Okay. Now, I want to talk about these patents

9 a little bit more that we've looked at.

10   THE COURT: Ask a question, Counsel.

11 Don't tell the witness what you want to talk about.

12   MR. BURESH: Thank you, Your Honor.

13   Q.   (By Mr. Buresh) Prior to your deposition, Mr.

14 Dietz, you hadn't read the '751 patent that's asserted

15 in this case for over 10 years; is that correct?

16   A.   That's correct.

17   Q.   And you were not going to educate yourself on

18 that patent prior to today; is that correct?

19   A.   That is correct.

20   Q.   So you do not have a working understanding as

21 to the technical aspects that are claimed in the '751

22 patent, do you?

23   A.   I do not.

24   Q.   Prior to your deposition, you had not read the

25 '789 patent in over 10 years; is that correct?

1   A.   That is correct.

2   Q.   And you testified that you would not educate

3   yourself prior to today?

4   A.   That's correct.

5   Q.   You do not have a working understanding of the

6   technical aspects claimed in the '789 patent, do you?

7   A.   No, I do not.

8   Q.   Prior to your deposition, you had not read the

9   '725 patent for over 10 years; is that correct?

10   A.   Yes, that's correct.

11   Q.   And you agreed not to educate yourself during

12   your deposition, correct?

13   A.   That's correct.

14   Q.   And you do not have a working understanding of

15   the technical aspects claimed by the '725 patent, do

16   you?

17   A.   No, I do not.

18   Q.   If you could turn with me to the '789 patent,

19   which I believe you had open. Could you do that for me,

20   please? I believe it's PTX-9.

21   MR. BURESH: If we could zoom in on the

22   References Cited, please.

23   Q.   (By Mr. Buresh) Mr. Dietz, we are looking now

24   at a term called "References Cited," do you see that?

25   A.   Yes, I do.

```
 1        Q.    And -- and what are References Cited in -- in

 2  a patent document?

 3        A.    It's -- it's the citation of patents prior to

 4  this one.

 5        Q.    So you're citing backwards at this point?

 6        A.    Exactly.

 7        Q.    At the time you filed these applications, did

 8  you read this Churchill reference that we're looking at?

 9        A.    I don't recall.

10        Q.    What about Chang, did you -- did you read that

11  patent?

12        A.    Again, I don't recall.

13                    MR. BURESH:  Could we turn to the second

14  page, please?

15                    I'm going to need to see all the text on

16  that, please.

17                    Thank you.

18        Q.    (By Mr. Buresh)  Now, do you see this asterisk

19  down at the bottom right-hand column, Mr. Dietz?

20        A.    Yes, I do.

21        Q.    And it says:  Cited by examiner.

22              Do you see that?

23        A.    Yes.

24        Q.    And then some of the patents up above have

25  that asterisk by them, correct?
```

1   A.   I see that, yes.

2   Q.   Do you know what that reference to cited by

3 examiner means?

4   A.   I believe it means that the patent examiner

5 from the Patent Office was -- was citing these specific

6 patents.

7   Q.   The first one we have highlighted here is

8 Zaumen, Z-a-u-m-e-n. Do you see that one?

9   A.   I do.

10   Q.   Did you read that patent?

11   A.   I don't recall.

12   Q.   Was it your practice to read patents that are

13 cited on your patents?

14   A.   Some I would.

15   Q.   But not all of them?

16   A.   Not necessarily.

17   MR. BURESH: I don't have anything

18 further for this witness, Your Honor.

19   THE COURT: You pass the witness?

20   Counsel, you pass the witness?

21   MR. BURESH: I do. Thank you.

22   THE COURT: Redirect by Plaintiff?

23   MS. ABDULLAH: Yes, Your Honor.

24   REDIRECT EXAMINATION

25 BY MS. ABDULLAH:

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 1        Q.    Mr. Dietz, Mr. Buresh asked you about your

 2  hourly rate for consulting for Packet Intelligence.  Do

 3  you remember that?

 4        A.    Yes, I do.

 5        Q.    And what exactly is it that you're being paid

 6  for?

 7        A.    I am -- I am being paid for my -- my time, you

 8  know, in this case.

 9        Q.    Is that time that you have to spend away from

10  your regular job?

11        A.    Yes, it is.

12        Q.    And is any of that payment linked in any way

13  to what happens in this case?

14        A.    No, it is not.

15        Q.    Now, if we could pull up the -- the portion of

16  the deposition transcript that Mr. Buresh showed you.  I

17  believe that was Page 250 through 251.

18                  MS. ABDULLAH:  And if we could have that

19  up on the screen, too, please?

20        Q.    (By Ms. Abdullah)  And on -- on Page 250, Mr.

21  Buresh started with a question at the bottom, and then

22  he went on to the next page.  Do you remember that?

23        A.    Yes, I do.

24                  MS. ABDULLAH:  And if we could blow up

25  that top part through Line 12, please.
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 1        Q.    (By Ms. Abdullah)   One of the answers that Mr.

 2  Buresh read to you starts at Line 4.   Would you read

 3  that into the record, please?

 4        A.    Not -- not specifically, but I thought I saw

 5  something in here when I was going through it about it.

 6        Q.    So when you said "in here," what -- what were

 7  you referring to there?

 8        A.    I believe it was a document or exhibit that

 9  was handed to me at the time.

10        Q.    And -- and was that the patent or one of the

11  patents?

12        A.    I believe so.

13        Q.    And so when you answered these questions, was

14  it in the context of looking at the patents

15  specifically?

16        A.    I believe it was one of the exhibits, yeah.

17  And I think it was that patent -- a patent.

18                    MS. ABDULLAH:   We can take that off the

19  screen.

20        Q.    (By Ms. Abdullah)   Now, Mr. Buresh also asked

21  you about whether you were going to educate yourself on

22  technical aspects of the patents.   Do you remember that?

23        A.    Yes.

24        Q.    And were you in the courtroom when

25  Mr. Skiermont talked about patents as deeds?   Do you
```

1 remember that?

2   A.   Yes, I do.

3   Q.   For property, right?

4   A.   Yeah.

5   Q.   And -- and how does that relate to your

6 understanding of the invention in the patents, if it

7 does?

8   A.   Yeah, sure. I mean, what I was describing

9 here today was my understanding of -- of the invention.

10 I am not a patent lawyer. I'm not a patent agent. And

11 I don't profess to know all of the details of the

12 claims.

13   Q.   And is a patent a legal document, kind of like

14 a deed?

15   A.   Yes, it is. I believe Mr. Skiermont's

16 description was -- was a good description of what a

17 patent is.

18   Q.   Now, Mr. Buresh also asked you about the --

19 one of the patents.

20   MS. ABDULLAH: If we could pull up the

21 portion that Mr. Buresh pulled up, Column 2, Lines 42 to

22 56. And I believe that's PTX-9.

23   Q.   (By Ms. Abdullah) And Mr. Buresh highlighted

24 those first two sentences and asked you about them. Do

25 you remember that?

1   A.   Yes, I do.

2   MS. ABDULLAH: Could we -- rather than

3   highlighting that same part, can we start with the

4   sentence at around Line 47, with "it is desirable," and

5   highlight that and the next sentence, please.

6   Q.   (By Ms. Abdullah) And, Mr. Dietz, would you

7   read for us this sentence that's highlighted on the

8   screen, please?

9   A.   It is desirable to be able to identify and

10   classify conversational flows rather than only

11   connection flows.

12   Q.   And if you could go on and read the next

13   sentence, too, please.

14   A.   The reason for this is that some

15   conversational flows involve more than one connection,

16   and some even more than one exchange of packets between

17   a client and server.

18   Q.   And can you explain to the jury what that

19   means in terms of the relationship between connection

20   flows and conversational flows?

21   A.   Yeah. So the -- what -- what we were --

22   what's stated here is that it is -- it's desirable to

23   identify and classify these -- this relationship that

24   I -- that I talked about, and we call that relationship

25   a conversation flow.

1   And the reason is, is that the conversation

2   flow, that relationship may -- may involve more than one

3   connection. And it may involve more than one set of

4   packets, so more than one connection flow, because

5   that's the term that was defined at the top, and more

6   than one exchange of packets because there's probably

7   more than one car coming and going or truck coming and

8   going on the highway in a -- in a connection flow.

9   Q.   And did Mr. Buresh ask you about this part of

10   the paragraph?

11   A.   No, he did not.

12   MS. ABDULLAH: Pass the witness.

13   THE COURT: Additional cross-examination?

14   MR. BURESH: Can we pull up what was just

15   up there, the '789 patent -- the -- the '789 patent,

16   Column 2?

17   RECROSS-EXAMINATION

18   BY MR. BURESH:

19   Q.   Now, Mr. Dietz, does the term "conversational

20   flow" appear in technical literature apart from your

21   patents?

22   A.   Not that I'm aware of.

23   Q.   So your understanding of conversational flow

24   must be coming from these patents that you're looking at

25   here?

```
 1      A.   From -- from the descriptions that you're

 2 showing here, yes.

 3      Q.   The descriptions that you swore in your

 4 deposition you weren't going to educate yourself on; is

 5 that right?

 6      A.   Yes, that's correct.

 7           MR. BURESH:  I have no further questions.

 8           THE COURT:  All right.  Redirect?

 9           MS. ABDULLAH:  None, Your Honor.  And may

10 the witness be excused?

11           THE COURT:  Mr. Dietz, you may step down.

12 Is there objection from Defendant to this witness being

13 excused?

14           MR. BURESH:  No, Your Honor.

15           THE COURT:  You may also be excused.

16           THE WITNESS:  Thank you, Your Honor.

17           THE COURT:  You're welcome to stay.

18 You're also free to leave.

19           Plaintiff, call your next witness.

20           MR. DAVIS:   Your Honor, at this time,

21 the Plaintiff calls Dr. Kevin Almeroth to the stand.

22           THE COURT:  All right.  If you'll come

23 forward, Dr. Almeroth.

24           You've been previously sworn.  Please

25 have a seat on the witness stand.
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 1                    THE WITNESS:  Yes, Your Honor.

 2                    THE COURT:  Let's get the notebooks

 3  passed out.

 4                    Mr. Nance?

 5                    COURT SECURITY OFFICER:  Yes, sir.

 6                    THE COURT:  All right.  Let's proceed

 7  with direct examination.

 8    DR. KEVIN C. ALMEROTH, PLAINTIFF'S WITNESS, PREVIOUSLY

 9                           SWORN

10                    DIRECT EXAMINATION

11  BY MS. ABDULLAH:

12      Q.   Good morning.

13      A.   Good morning.

14      Q.   Would you please introduce yourself to the

15  jury?

16      A.   Sure.  My name is Kevin Almeroth.  I'm in the

17  Department of Computer Science at the University of

18  California in Santa Barbara.

19      Q.   And are you married, Dr. Almeroth?

20      A.   Yes, I am.

21      Q.   Do you have any kids?

22      A.   I do.  I have a boy who's turning eight years

23  old later this week and a girl who's four and a half.

24      Q.   Were you retained as an expert witness in this

25  case by Packet Intelligence?
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 1        A.    Yes, I was.

 2        Q.    And what were you asked to do here?

 3        A.    I was asked to consider the three

 4 patents-in-suit, '789, the '725, and the '751, and

 5 compare certain of the claims, the asserted claims

 6 against the Sandvine PTS products.

 7        Q.    And how are you compensated for the work

 8 you're doing?

 9        A.    Hourly.

10        Q.    Does your compensation depend in any way on

11 the outcome of this case?

12        A.    No, ma'am.

13        Q.    Now, before Packet Intelligence hired you, did

14 you know anyone at Packet Intelligence?

15        A.    I did not.

16        Q.    Did you -- had you ever encountered Mr. Brad

17 Brunell before?

18        A.    No.

19        Q.    And had you met Mr. Vachon before?

20        A.    No.

21        Q.    Had you met any of the inventors before you

22 were hired in this case?

23        A.    No, I had not.

24        Q.    And had you met any of the lawyers on the

25 Packet Intelligence team?
```

1   A.   No, none of them.

2   Q.   Now, when you started with your analysis of

3   the claims, were you leaning one way or the other?

4   A.   No, it's -- it's -- my position that when I

5   come into a case to do my analysis, that I don't come in

6   with any preconceived notions as to whether or not the

7   accused products infringe or not.

8   Q.   And did you prepare some slides today to help

9   us understand your testimony?

10   A.   Yes, ma'am, I did.

11   Q.   Would you please start by describing your

12   educational background?

13   A.   Sure.   That's the first demonstrative I have

14   up there in the -- or, sorry, the lower left is the

15   education.   I have a Bachelor's, a Master's, and a

16   Ph.D., all in computer science from Georgia Tech.   And

17   my Ph.D. was in 1997.

18   Q.   Did your studies have any particular focus?

19   A.   They did.   When I was studying for my Ph.D., I

20   was interested in the time of being able to do audio and

21   video delivery over the Internet.   It seems kind of

22   common today, but in 1994 or 1995, it wasn't common at

23   all.

24   I was interested in seeing if -- how we could

25   get the Internet to -- to do those kinds of things.

```
 1        Q.    And what did you do after you received your

 2   Ph.D.?

 3        A.    I applied to a number of universities.  I

 4   liked the idea of doing research, as well as being able

 5   to teach.  And I ended up accepting an offer from UC

 6   Santa Barbara, the school I'm at now.

 7        Q.    How long have you been at UC Santa Barbara?

 8        A.    Since '97, so that's about 20 years.

 9        Q.    And do you have tenure there?

10        A.    Yes, ma'am, I do.

11        Q.    And when did you earn that?

12        A.    I believe that was 2001.

13        Q.    What exactly are your job responsibilities as

14   faculty at U -- University of Santa Barbara?

15        A.    Principally it's teaching and research, and

16   that's both doing research and helping other students

17   earn their master's or Ph.D. degree, mentoring them, but

18   then also teaching classes, both undergraduate classes

19   and then also for graduate students.

20        Q.    And can you talk a little bit more about what

21   kind of classes you teach?

22        A.    Certainly.  The classes I teach fall very much

23   in line with the material that's at issue in this trial.

24   I talk about the Internet and how protocols work in the

25   Internet.  Those are the rules for how communication
```

1 takes place. I start off the course with all sorts of

2 acronyms, and by the end you'll understand these

3 acronyms and how they're used to make the Internet

4 operate.

5   Q.   And have you taught any courses about networks

6 and the technology and the kind of things that we've

7 been talking about today?

8   A.   I do. I've taught courses on the protocols

9 I'll be referencing today. I've taught courses about

10 even packet monitoring where we look at packets on the

11 network and try to understand those packets as -- as

12 what's happening in the network.

13   Q.   Aside from teaching, what other

14 responsibilities do you have in your current job?

15   A.   Research, mentoring grad students and teaching

16 them how to do research. And essentially, that means

17 that if you want students to develop new systems, to

18 develop new software, new hardware, to develop new

19 services, to start companies, to work in established

20 companies on new products, it's the idea of how we take

21 what we know and extend it to be able to do things we

22 didn't think we could.

23   Q.   And what kind of research projects have you

24 worked on throughout your career?

25   A.   A lot of research projects around audio and

1 video in understanding what happens to the Internet when

2 you try and deliver that much data. One of the first

3 projects I worked on was essentially TiVo in about 1994

4 where we wanted to put some memory into a cable set-top

5 box so that you could pause or rewind the program that

6 you were watching. And since that time we've looked at

7 how to do wireless -- audio and video to wireless

8 devices like iPhones and iPads and even laptops.

9   Q.   As a result of this research you've done, have

10 you had any publications?

11   A.   Yes. Publications are the principal form that

12 we disseminate our results, so if we come up with a good

13 idea, it goes to a peer-reviewed journal. And we'll

14 publish the results so that others can see our ideas and

15 potentially take advantage of them.

16   Q.   Now, does your research primarily involve

17 other professors or your students?

18   A.   No, it doesn't.

19   Q.   Do you collaborate with anyone for that

20 research?

21   A.   I do. I've got another demonstrative here

22 where it lists some of the research themes. But also on

23 the right side here, you have a series of industry

24 collaborators.

25   One of the things I wanted to do when I

1 graduated was not just publish papers and hope other

2 people read them, but to take those ideas and go and

3 collaborate with companies to see if the ideas and the

4 things that we were working on could benefit companies

5 and ultimately have a benefit for the consumers who were

6 using those products.

7   So you can see here I've worked with a bunch

8 of companies, Cisco, Juniper, Redback, Procket,

9 companies that make routers and switches and -- and

10 devices that help the Internet to deliver data.

11   Q.   Have you worked with parts of the government?

12   A.   I have.   The one in the middle here is the Air

13 Force.

14   Based on some of the publications and

15 collaborations that I had with companies, the Air Force

16 asked me to help design the next generation Internet for

17 the military.

18   And it was a very interesting challenge

19 because the military works in environments where the

20 networks aren't really stable.   They do it on

21 battlefields, they do it during disaster recovery when

22 all the cell towers have been blown over or the

23 infrastructure has been flooded.   And so being able to

24 design a network that's a combination of satellites and

25 mobile elements highly secure, able to support all of

1 the needs of the military both in battle and disaster

2 recovery was something that I worked on.

3   Q.   Are you a member of any professional

4 associations?

5   A.   I am. One of the ones that's listed on here

6 is the IEEE. It's the Institute for Electrical and

7 Electronics Engineers. It's essentially a group of --

8 of academics and researchers in industry who work

9 together on standards and publishing papers.

10   Q.   How are your education and work experience

11 relevant to the testimony you're going to give here

12 today?

13   A.   In a couple of ways, both in the subject

14 matter for the kinds of networks and the applications

15 and protocols that you've heard about so far and will

16 hear through the rest of this week are things that I

17 have worked on as part of my research and also as part

18 of the courses that I teach.

19   Moreover, as somebody who's earned a Ph.D.,

20 part of what we're asked to do and learn to do is to be

21 able to look at a problem, identify potential solutions,

22 and figure out which of the solutions work best.

23   And it's that kind of methodology that I try

24 and develop so that it's systemic, so that I can use

25 that kind of methodology when I'm asked to answer

 1 | questions as an expert about infringement, for example.

 2 | Q.   So have you done an infringement analysis

 3 | before?

 4 | A.   I have.

 5 | Q.   And how many times approximately?

 6 | A.   Maybe about 20 times.

 7 | Q.   And have you testified in a U.S. District

 8 | Court before?

 9 | A.   Yes, ma'am, I have.

10 | Q.   And approximately how many times have you done

11 | that?

12 | A.   Probably about a dozen times.

13 | Q.   And have you ever received any special

14 | recognition for all of the work that you've described?

15 | A.   I have. I mentioned the IEEE. They have

16 | different levels of membership. They have member,

17 | senior member, and also a fellow. The fellows are

18 | nominated by your peers, and you go through a rigorous

19 | review process. They select about one-tenth of 1

20 | percent of the membership, and they recognize you for

21 | significant research accomplishments to the field. And

22 | so I've been elevated as an IEEE fellow.

23 | Q.   And have you also received any awards for your

24 | teaching?

25 | A.   I have, both within the department and across

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 1  the campuses.   It's something I enjoy very much.
 2                  MS. ABDULLAH:   Your Honor, at this time
 3  I would like to offer Dr. Almeroth as an expert witness
 4  skilled in the technology of the relevant art.
 5                  THE COURT:   Is there objection?
 6                  MR. BURESH:   No objection, Your Honor.
 7                  THE COURT:   All right.   The Court will
 8  recognize the witness as an expert in the designated
 9  fields.
10                  Let's proceed.
11      Q.   (By Ms. Abdullah)   Now, Dr. Almeroth, what
12  specifically have you been asked to do in this case?
13      A.   I've been asked to look at the three asserted
14  patents and the four asserted claims and determine
15  whether or not those accused products practiced the
16  claims.
17      Q.   And did you reach opinions as to whether
18  Sandvine's accused products infringe the asserted
19  claims?
20      A.   I did.   And I have a demonstrative on that.
21  This demonstrative show -- shows the classes of accused
22  products.   And then also the four asserted claims of the
23  three asserted patents and the asserted -- or sorry, the
24  accused products are -- are generally called the Policy
25  Traffic Switch products, the PTS products.   And that
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1 includes the -- the range of the products that you see

2 shown here on the screen.   The PTS 14000, which is

3 PTX-359; the PTS 22000, which is PTX-356; the PTS 24000,

4 which is PTX-357; the PTS 32000, which is PTX-357; and

5 then the PTS virtual series, which is PTX-362.

6   Q.   You mentioned a number of PTX-numbers.   What

7 are those?

8   A.   Those are the exhibits that have been used in

9 this trial, and they're given a specific unique

10 designation.   And so they -- it's my understanding they

11 become evidence in the trial, so when I refer to

12 evidence that I've relied on in reaching my opinions, it

13 will typically be associated with an exhibit number, P

14 for the Plaintiff or DX for the Defendant.   And so I'll

15 be identifying those when I describe evidence I've

16 relied on.

17   Q.   And what does that chart with the check --

18 checkmarks show?

19   A.   That shows the result of my analysis to

20 determine whether there was infringement.   You'll see in

21 that first column, there are the three patents and the

22 four claims.   And then a checkmark indicates that for

23 each of those claims, I have determined that there's

24 infringement for that claim.   And that means that the --

25 all of the products meet each and every one of the

 1 limitations of each and every one of those claims.

 2   Q.   Can you describe for the jury how you came

 3 about your opinion that you've reflected on this slide?

 4   A.   Yes. I have a demonstrative on that. This is

 5 my methodology. I think I've referenced it a couple of

 6 times. Again, I try and come into a case that I've been

 7 hired to work on with an open mind and not yet -- having

 8 yet determined a conclusion as to whether or not there's

 9 infringement. And I really look at two sets of things.

10   On the one hand, I look at the patents, the

11 specifications, the prosecution history, the process

12 that they went through to become U.S. patents.

13   I look at the claim construction materials,

14 and what that means is that there's certain terms in the

15 patent that have a particular meaning. And the Court

16 issues an order and says: These terms will have these

17 meanings. And so I look for those terms and those

18 meanings in the accused products.

19   So once I have an understanding of the patents

20 and specifically the language of the claims and the

21 requirements of those -- those claims, I then look at

22 the accused products. And there's a variety of

23 information that's available that I can look at.

24   There's what I call customer facing documents.

25 So that's the -- the marketing materials that a company

 1 will give to its customers describing the functionality

 2 of what those products do.

 3   Other things I'll look at are technical

 4 documents. So within the company they will record and

 5 have documents that say what their products do. What

 6 happens inside of the products, how the different pieces

 7 work.

 8   There's also source code, I think, was

 9 mentioned in the opening. Those are the computer

10 instructions that somebody writes in a programming

11 language -- it's not like English, but I understand it

12 and programmers understand it, and it tells me

13 specifically what those devices are doing and how they

14 work.

15   I also have the deposition testimony from the

16 corporate designees at Sandvine. They'll tell me --

17 through the depositions, they're asked questions under

18 oath. I can look at those questions and answers to help

19 understand also how the products work.

20   I write an expert report. It will get filed.

21 Sandvine will have an expert. They'll write a rebuttal

22 report. I look at all of those reports and consider all

23 of that evidence.

24   There's also admissions that are made from --

25 by both parties.

 1   So I'll take the complete set of documents

 2 that I have available and try and understand, to the

 3 best of my ability, how the accused products work, and

 4 then do a comparison between those two to see if the

 5 claims are met, the words of the claims, the limitations

 6 or the functions of the claims are met as part of my

 7 analysis. And then I'll reach a conclusion about

 8 whether or not there's infringement.

 9   Q.   Can you tell us first a little bit generally

10 about what exactly the Packet Intelligence patents are

11 about?

12   A.   Sure. I have a demonstrative of -- on this,

13 and it's the three patents are shown there on the left

14 side, the '789, the '751, and the '725.

15   And I've got a description here. And I wanted

16 to read it. Basically, those patents describe

17 monitoring and classifying network traffic by examining

18 packets. They attempt to identify the underlying

19 protocols and applications and user activity. And then

20 through that, to provide detailed information about

21 what's happening in the network.

22   Q.   Can you explain some of that very technical

23 information on that slide?

24   A.   Sure. It's important to understand what some

25 of those concepts are, so I have some demonstratives

1 that explain some of those terms to -- to try and get a

2 better understanding.

3   The first is I have a demonstrative that shows

4 a variety of devices that can exist on a network. And

5 I'm focused on explaining how things work today. So

6 that can include things like a TV set, a laptop, or a

7 mobile phone or a tablet, all of which would be

8 connected to a network and ultimately be able to run

9 applications. You can see data or web pages or

10 pictures, and I think that starting with the devices is

11 what I'm showing here.

12   The next is there's -- there's really another

13 piece of this puzzle, which is you have the device that

14 I'm showing here on the left side. There was some

15 discussion in the opening about servers. And I think it

16 was described servers hold content. And then you use a

17 network to connect the devices to those servers. The

18 clients will make requests over the computer network for

19 information. The servers will return that information,

20 and then the user will be able to see whatever that

21 information was displayed on whatever that device was.

22   And it does so through a network, and so I've

23 added a line in this next demonstrative which shows that

24 there's a -- a connection through the network that

25 connects the user device with the server.

 1   Q.   So in this particular example, what server is

 2 the user device connecting to?

 3   A.   In this example, it's -- it's chosen to

 4 connect to the Netflix server because it wants to watch

 5 a movie. There's other servers on the network like

 6 Facebook. Just about any service that you have where

 7 you're getting information from the network will have

 8 some kind of server. CNN, Fox, ESPN for sports,

 9 anything on the Internet will eventually have a server

10 to connect to.

11   Q.   And how exactly does data go across that

12 network?

13   A.   The way that it goes across is in the form of

14 packets. So little segments of data. And to better

15 explain that, I've got some demonstratives here that

16 draw an analogy between the packets of a data network

17 and the U.S. mail.

18   So there's a fair number of similarities

19 between these, and it helps me explain -- or sort of

20 peel the onion to another layer deeper, so I can explain

21 some of the concepts.

22   So the first thing is if I use this mail

23 analogy, you'll see on the outside that there's an

24 address, and that address adheres to a particular

25 structure. You have the name, then the street, and the

1 number, and the city, state, and the zip code.

2   What I'm going to call that is the header.

3 That's the information that goes on the outside of the

4 envelope that tells you where that packet is destined.

5 If I'm a computer and I send a packet into the network,

6 it will have this same kind of information to tell where

7 the Internet, the server is that it needs to go.

8   The other thing is, as part of this packet in

9 its header, there are protocols, and the protocols are

10 the rules for how that information is structured and how

11 that protocol works.

12   Sometimes I've heard the concepts of a

13 protocol used, you know, how you behave when you meet

14 the Queen. Or in this case with an envelope it's how

15 the information is structured. You don't just put the

16 zip code first, it follows a particular pattern. The

17 address goes in the middle, there's a portion for the

18 postage, sometimes there's a return address. All of

19 that is the rules for how this information is

20 structured. And there's corresponding protocols in the

21 Internet that do essentially the same thing.

22   Now, inside of this envelope is the data, the

23 contents. And if you're sending a letter, it might be,

24 you know, who it's to or from or a check hopefully. And

25 in the Internet, it's data. And so you have a portion

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 1  of data which is usually 1s and 0s, and then a header

 2  that surrounds it.

 3          And these packets flow through the Internet.

 4  Millions of packets per second, and they all get routed

 5  to the particular servers, and then response data

 6  packets are generated and sent through the network.

 7  It's almost like the U.S. mail system but sped up a

 8  hundred or a thousand times.

 9      Q.    So how exactly do these packets that you've

10  shown here relate to the network?

11      A.    They relate to the network because you can use

12  this address to figure out how to get to the

13  destination.

14          So this next demonstrative shows that based on

15  the address on the envelope in the U.S. mail example

16  that we narrow the location to here in Marshall, Texas.

17  You can then use the next line of the envelope to

18  identify the courthouse.  And so once a letter is routed

19  to the courthouse, you can use this last piece to -- to

20  reach me here on the stand.

21          And the Internet works in a very similar

22  fashion, that the headers of different portions work

23  together in order to get the data through the network.

24  And I think I have a demonstrative on -- on that portion

25  now where I start to move away from the mail analogy
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 1  back into the Internet analogy or explanation and start

 2  to look at some of the protocols.

 3          So there's a stack of protocols that are used.

 4  These protocols work together in the Internet.  There's

 5  literally hundreds of protocols.  There's things like

 6  Ethernet, WiFi, DSL or cable modems at home.

 7          And then there's this protocol called the

 8  Internet protocol, and that's pretty much common to the

 9  Internet.  It identifies things like the particular

10  computer that a packet will go to.

11          And then TCP and UDP provide services on top

12  of IP to help data get through the network.

13          And then you usually have a protocol that's

14  specific to an application.  HTTP is the protocol that's

15  used for the web.  So sometimes you'll see an address

16  that says http://espn.com, and that is to say to use

17  that particular protocol.

18      Q.   And so how would that letter that you've shown

19  on the left relate to these layers of protocol that

20  you're showing us on the right?

21      A.   On the next demonstrative, I've replaced the

22  letter with a data packet.  A user device like an iPad

23  will have all of these protocols in it.  And when they

24  generate data that's sent out from the device, it will

25  include all of these protocol headers.  That will be
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 1 sent across the network in both directions to the

 2 server. The server receives it and can use that

 3 information to process and decide what to do with that

 4 packet.

 5   Now, in practice, when we send these packets

 6 over the network, it's not in kind of this stacked

 7 relationship. It's more set out horizontally, because

 8 we send the bits through the network, the 1s and 0s

 9 representing the data one at a time. So you'll have the

10 -- the application here, which is Netflix. It uses the

11 HTTP protocol. And then that's supported by its parent

12 protocol, TCP, which is supported by its parent, IP, and

13 then its parent, Ethernet.

14   So there's a relationship on how these -- how

15 these protocols all work together.

16   Q.   Can you show us how the packets travel on the

17 network when, let's say, the iPad tries to get a movie

18 from Netflix?

19   A.   Sure. I have a demonstrative on this that has

20 an animation. It goes back to where I have the servers

21 here on the right side, the network in the middle, and

22 then the user device.

23   I think it's been explained a couple of times

24 that the device will send a request, it will go through

25 the network, it will reach the server using all of those

1 packet headers, and then you'll get a response back that

2 will be some of the data.

3   Now, one of the things that I've added here on

4 this demonstrative is to show what happens between any

5 two of routers and the Internet. And so I've zoomed in

6 to look at trying to understand the traffic that will

7 flow across this single physical link, the cable, but

8 then separate it out into different connection flows.

9   So let me step through the first part of the

10 animation. There's a request that will be made, that

11 goes across the network, and then a series of blue

12 packets that are the data that come back, and that will

13 let you start to watch Forest Gump on your iPad.

14   I want to back up and show that again because

15 I'm showing you both the packets across the core network

16 here and then blowing up this one link, and you can see

17 those packets down here on that top link.

18   And so here's the animation.

19   And so that's part of one connection. And

20 then the concept of a connection has been mentioned

21 before. It's between a particular device and server,

22 and it will have the same address information associated

23 with that connection.

24   Now, the way that something like Face -- or

25 Netflix works is you don't request the whole movie and

1 get the whole movie at one time. You request a portion

2 of the movie. When you're done watching that portion,

3 before it ends, you'll request the next portion, and

4 then your device will seamlessly tie those together.

5   So in practice, what this looks like is

6 another request that goes over the network, another set

7 of blue packets that are returned, but the difference

8 will be that second set, because it happens on a

9 different connection, will be shown on this bottom line

10 between the two routers.

11   So the request goes across, the packets come

12 back, and so you're seeing that as the different pieces

13 of the movie are requested, they form different

14 connections across the network.

15   Q.   Now, is this process happening all the time on

16 the Internet?

17   A.   It is. It's -- you can imagine that there are

18 thousands or millions of servers, millions of user

19 devices. It's operating at millions of packets per

20 second. It's all happening very, very quickly.

21   So if you were to look at just a single

22 connection, there would be millions of packets for

23 hundreds or thousands of different connections all

24 flowing across a particular link. And that's the -- the

25 monitoring and the tracking and the understanding

1 problem that the patents were trying to solve.

2   Q.   And so do the patents mention specifically

3 these issues that you were just talking about?

4   A.   They did. So if we look at, for example, the

5 '789 patent, which is PTX-9, at Column 53 -- or, sorry,

6 Column 1, Lines 53 through 67, and then a second portion

7 at Column 3, Lines 45 through 51, the inventors of the

8 patent recognized the challenge that was about to happen

9 in the Internet, that there's a need that's become

10 especially acute given the recent popularity of the

11 Internet and other Internets.

12   So in this kind of 1999 time frame, the

13 inventors had started to recognize just how important it

14 was given the scaling of the Internet that was about to

15 take place.

16   It's increasingly important to be able to

17 monitor the use of those services and to rate them

18 accordingly. Such objective information includes which

19 services, i.e., which applications are being used, who's

20 using them, how often they've been accessed, and for how

21 long. It's useful in the maintenance and continued

22 operation of the network.

23   And so even if you only have access to a

24 single link in the network and the millions of packets

25 that are flowing through every second, you have to be

```
 1  able to organize and understand those packets.

 2          So there's a portion down here in this last

 3  one.  It should -- rather, it should allow a user, such

 4  as the network administrator or Internet service

 5  provider the means to measure and analyze network

 6  activity objectively, to customize the types of data

 7  that's collected and analyzed, and to undertake

 8  real-time analysis and to receive timely notification of

 9  network problems.

10      Q.    And how did the patent primarily address this

11  issue of looking at all the traffic now going back and

12  forth?

13      A.    The way that the patent did it was to be able

14  to take those disparate, those different connection

15  flows, and to be able to group them together into what

16  was called a conversational flow.  And we've heard that

17  term a couple of times.

18          The idea is if you have an application like

19  Netflix where there's two different connections, you

20  want to be able to relate those disjointed connections

21  together so that when you try and understand what's

22  happening in the network, you don't treat them as two

23  different uses of Netflix, but the continued use of the

24  video to watch the same movie to be able to relate those

25  connections together in some particular way.
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 1   So I have an animation that was similar to

 2 what happened before. It's showing the packets going

 3 across with the different segments of the Forest Gump

 4 video. And the idea of the conversational flow is one

 5 example in this instance would be to relate those two

 6 separate connections together and to be able to call

 7 that a conversational flow.

 8   Q.   And how would a packet monitor fit in on the

 9 network that we've been talking about?

10   A.   The packet monitor of both the -- the patent

11 and the accused products would be able to sit on a link.

12 And what that means is it would be able to be connected

13 into a network and see the data that was going across

14 that link and then perform its functions of identifying

15 packets, identifying connections, and then identifying

16 the conversational flows that are the relationship among

17 those connections.

18   Q.   So based on what you've described for us so

19 far, can you summarize what it is exactly that the

20 inventions describe?

21   A.   Sure. I -- I read these words before, and

22 then I went through this kind of tutorial. And I'm

23 hoping now for it to make a little bit more sense.

24 But the basic idea of the invention was to monitor and

25 classify network traffic by examining packets. Seeing

1 the data that goes through, monitoring those packets to

2 see what they are, and then classifying them,

3 classifying them as certain types of packets, as certain

4 types of connections, and then relating those

5 connections as conversational flows.

6   This next one, to identify the underlying

7 protocols, applications, and user activity. You get a

8 sense of what the applications are by looking at single

9 connections, but to understand what the user activity is

10 or in some instances for applications that have multi

11 connection flows, you have to look beyond just the

12 connections. You have to relate those connections

13 together so that you understand what applications they

14 go with.

15   Many of the applications today have many

16 connections that are associated with user activity. And

17 you have to be able to correlate those together to

18 identify the connections that are associated together

19 into a conversational flow. And that's where you get

20 some of the additional analysis.

21   And ultimately, you get detailed information

22 about what's in the network.

23   Q.   What are some of the benefits of being able to

24 do these things?

25   A.   Briefly, the -- there's three main benefits.

1 You get traffic classification, which is important. You

2 also get quality of service, and then network security.

3 Within the specification of the patents, in the -- the

4 text portion, it describes each of these benefits. And

5 so from the '725 patent, PTX-3, there's two places,

6 Column 12, Lines 22 through 26, and then Lines 30

7 through 33.

8   And it says: By maintaining the state of the

9 flows, the connection flows, and knowing that new flows

10 may be set up using the information from previously

11 encountered flows, that you have a relationship between

12 the flows that form a conversation. The network traffic

13 monitor provides for single packet protocol recognition,

14 meaning right -- right away, based on one packet, you

15 can immediately determine that this is for Netflix, or

16 you can look at multiple packets. You have to sort of

17 start to see the sequence of packets before you can

18 really understand what the application is and what the

19 user is doing.

20   What may seem to prior art monitors to be some

21 unassociated flow may be recognized by the invention --

22 inventive monitor using the flow signature to be a

23 sub-flow associated with a previously encountered

24 sub-flow.

25   What that means is if you just looked at

1 connections, you wouldn't be able to put the two pieces

2 together and you wouldn't have as detailed of an

3 understanding of what was happening in the network.

4 But by being able to recognize that you have some flows

5 that are related to each other, you gain a new depth of

6 understanding about what the monitor is able to

7 determine. And this is the concept of a conversational

8 flow, being able to relate those flows together.

9   THE COURT: Let me interrupt at this

10 point. Ladies and gentlemen, we're going to recess for

11 lunch. We'll continue this direct examination after we

12 return from our lunch break.

13   If you would, close and take your

14 notebooks with you as you recess to the jury room for

15 lunch. Your lunch is there and should be waiting for

16 you. Please follow all the instructions I've given you

17 throughout the trial, including not to discuss the case

18 with each other. We will try to convene at 12 --

19 reconvene rather at 12:45.

20   So with that, you're excused for lunch.

21   COURT SECURITY OFFICER: All rise for the

22 jury.

23   (Jury out.)

24   THE COURT: Be seated, please.

25   Counsel, I have another unrelated short

1 hearing at 12:15. I trust you'll be out of the way when

2 I conduct that. Otherwise, we'll try to reconvene at

3 12:45.

4   Ms. Abdullah, you're going to have to

5 examine this witness in the ordinary course. We're

6 getting very close to him launching into a narrative

7 lecture to the jury. You asked him what were the

8 benefits, and we were well into not only what they were

9 but describing them in great detail when I broke for

10 lunch. So as we go forward, this is going to need to be

11 an ordinary examination, not a narrative lecture.

12   MS. ABDULLAH: I understand.

13   THE COURT: All right. We stand in

14 recess for lunch.

15   COURT SECURITY OFFICER: All rise.

16   (Recess.)

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 7                         CERTIFICATION

 8

 9         I HEREBY CERTIFY that the foregoing is a true

10  and correct transcript from the stenographic notes of

11  the proceedings in the above-entitled matter to the best

12  of my ability.

13

14

15  /s/Shelly Holmes_____                _11/6/17_____
    SHELLY HOLMES, CSR, TCRR                       Date
16  OFFICIAL COURT REPORTER
    State of Texas No.:  7804
17  Expiration Date:  12/31/18

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